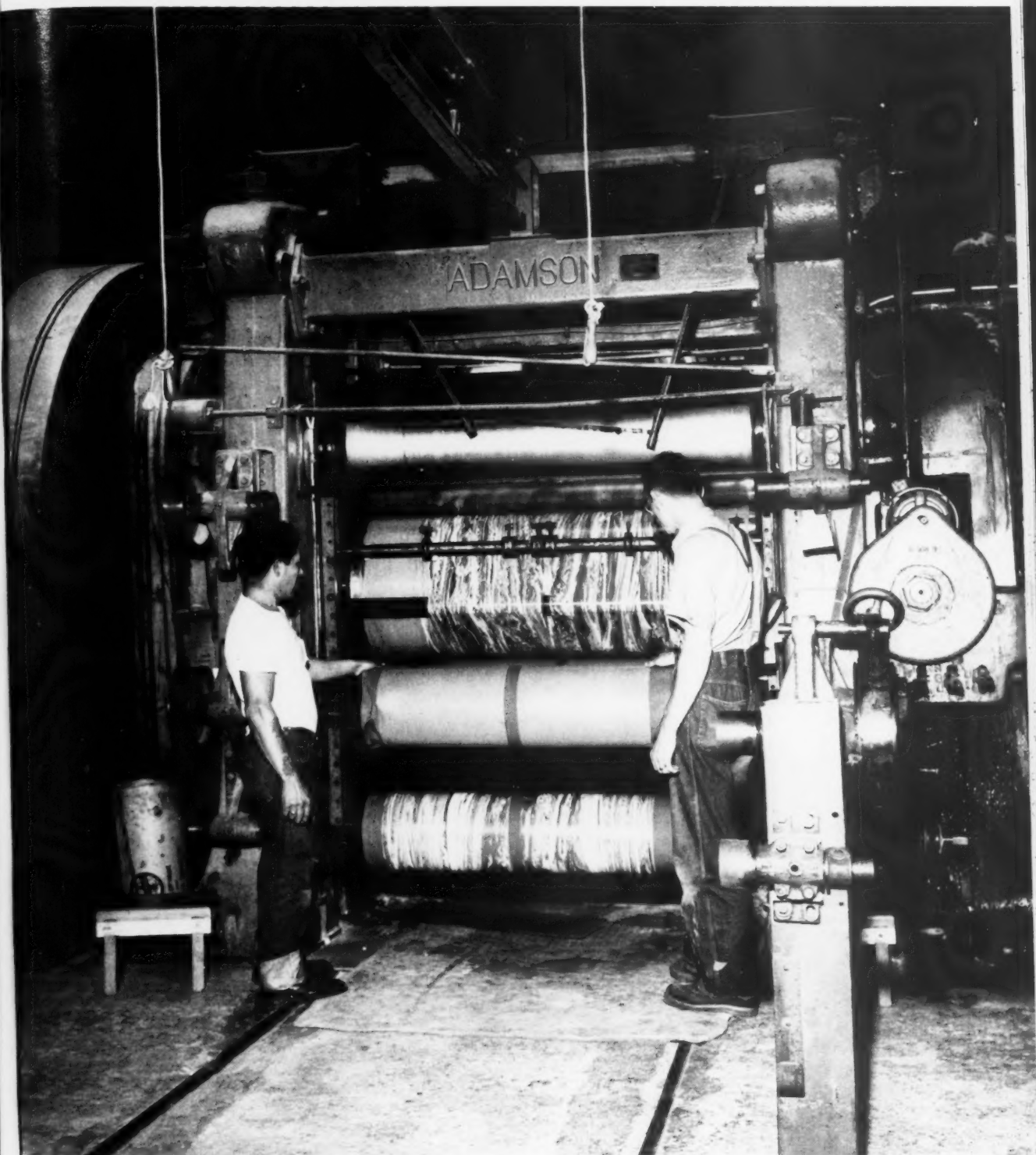


# WESTERN INDUSTRY



• It takes work to make people play. Here is one step in fabricating beachballs in a Western plant. For details, see page 5.

**FEBRUARY**  
**1950** VOLUME XV  
NUMBER 2

- *Western furniture factory makes labor cost control standards pay out.* p. 31
- *Three-dimensional photographs that show four sides of your product.* p. 42
- *Lightening heavy production problems by using air-operated equipment.* p. 36
- *Labor's dilemma; trying to preserve freedom without losing security.* p. 49

# SAVES WEIGHT! ...SAVES TIME!

## CABCO ALL-BOUND CONTAINERS SAVE 25 POUNDS, CUT PACKING TIME 75% ON ELECTRIC MOTOR SHIPMENTS

A 25-pound reduction of actual tare weight! And a 75% saving on packing time! That's how Cabco all-bound wooden containers are helping General Electric Company save on shipments of 3-hp electric motors from its San Jose, Calif. plant. Cabco all-bounds cut packing

time from 4 minutes to 1 minute per motor. Shipping weight is reduced 13% over nailed crates formerly used. And Cabco all-bounds (received flat, ready to use) also simplify and speed container handling within the plant on the loading dock and at the destination.

## IN MANY INDUSTRIES...

...from the equipment manufacturer to the fruit and produce grower, shippers are benefiting from the multiple advantages of Cabco all-bounds. These modern, engineered containers give excellent product protec-

tion, often weigh less, require little storage space, are easy to handle, and fold together in seconds without hammer or nails. Cabco all-bounds are made by the West's oldest, foremost manufacturer of wooden containers.

Find out how Cabco all-bounds can help you! Investigate Cabco's container design service. Write direct to exclusive sales agents:

### DUFF CALIFORNIA CO.

Sawn Shook, Barrels, Veneer Covers and All-Bound Containers  
100 Bush Street, San Francisco 4, California • Telephone SUtter 1-2260  
2581 E. Eighth Street, Los Angeles 23, Calif • Telephone ANGelus 1-4161



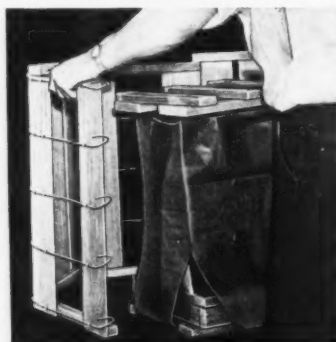
Nailed crate formerly used.  
Weight loaded 175 lbs.  
Packing time, 4 minutes.



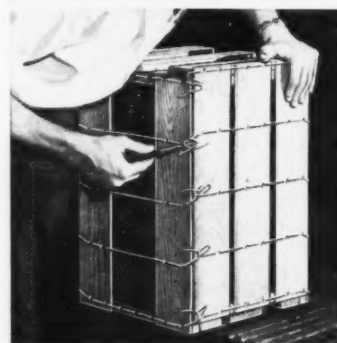
Cabco all-bound container  
Weight loaded 150 lbs.  
Packing time, 1 minute.



START! 3 hp G. E. motor rolls along assembly line to packing point.



30 SECONDS LATER! Paper cover on, top in place, Cabco all-bound wraps around motor.



1 MINUTE LATER! Container securely closed, motor ready to ship!

## CALIFORNIA BARREL COMPANY, LTD.

OFFICES: SAN FRANCISCO, LOS ANGELES and ARCATA, CALIFORNIA  
SALT LAKE CITY, UTAH • PLANTS: ARCATA, SAN FRANCISCO, LOS ANGELES

**CABCO**  
CONTAINERS  
THIS IS OUR 66TH YEAR

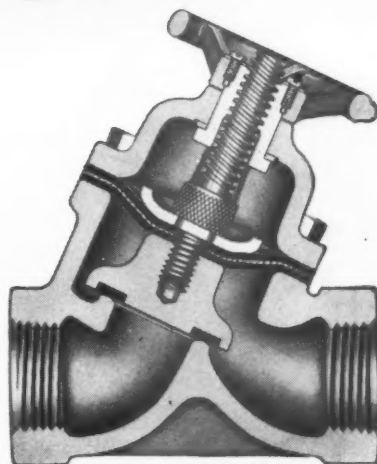
# Piping equipment for every system... from one complete line

## FOR BETTER CONTROL OF HARD-TO-HOLD FLUIDS

Crane Diaphragm Valves—in plain iron or Neoprene-lined types—are ideal for conveying compressed air, compressed or liquefied gases, volatile and corrosive fluids. Crane separate disc-diaphragm construction—a revolutionary improvement in packless valve design—makes these new valves safer, more durable, more efficient.

On Crane valves, the diaphragm is used only to seal the bonnet... is not subject to cutting, crushing and rapid wear. A separate circular disc permits positive shut-off even should the diaphragm fail. Y-pattern body design assures greater flow capacity, minimizes pressure drop. Crane separate disc-diaphragm design reduces appreciably the torque required to operate these valves. For further information, WRITE FOR CIRCULAR AD-1761.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.  
Branches and Wholesalers Serving All Industrial Areas

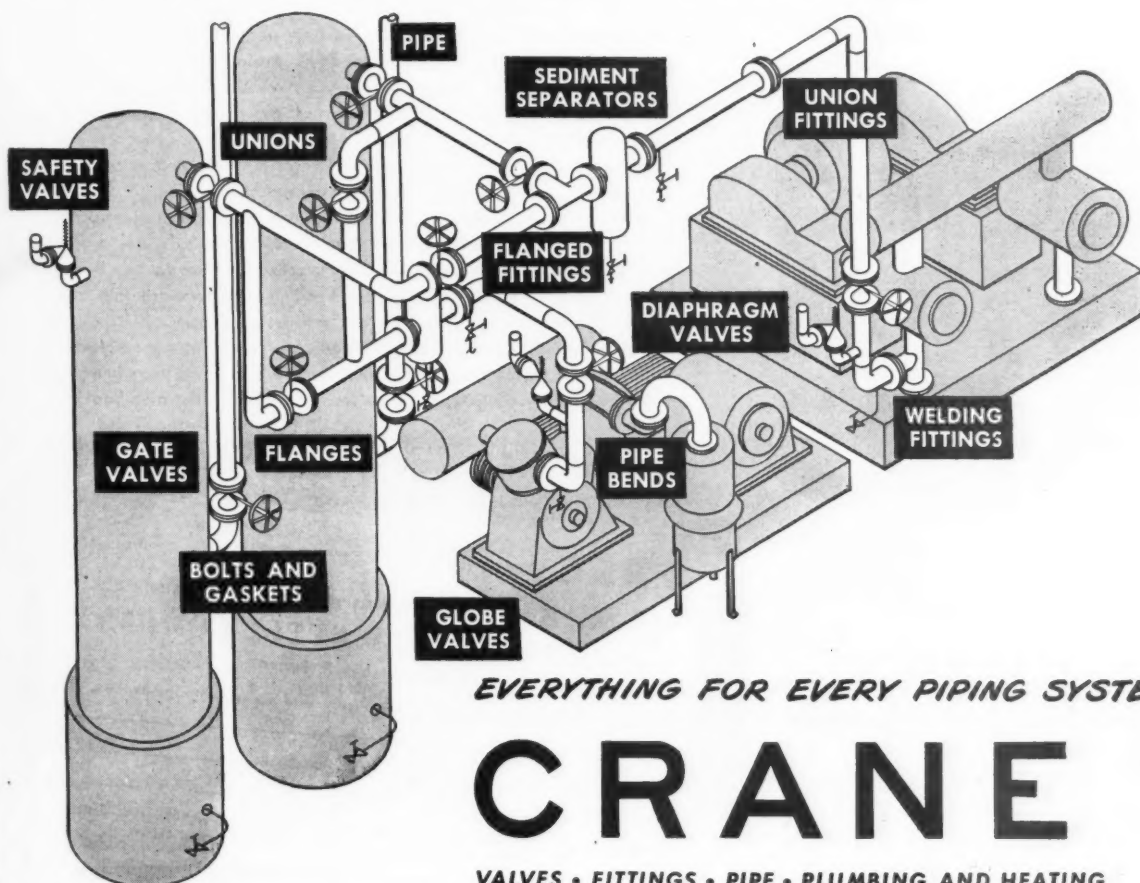


### WORKING PRESSURES:

Up to 150 pounds water, oil,  
air or gas—180° F. max.  
temp. Sizes up to 6 in.  
Screwed or flanged ends.



● ONE ORDER TO CRANE COVERS ALL PIPING NEEDS...  
FOR THIS AIR COMPRESSOR INSTALLATION, FOR EXAMPLE



EVERYTHING FOR EVERY PIPING SYSTEM

# CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

# NON-SLIP—EVEN ON STEEP INCLINES



## *Revolutionary New* ABRASIVE ROLLED STEEL FLOOR PLATE

*New Unique Safer under foot*

### End Costly Slipping Accidents Now with **A.W. ALGRIP**

(Positive Non-Slip Floor Plate)

Now, for the first time, you can end costly slipping accidents with a floor plate that's truly non-slip. Tough abrasive grain (the same type used in grinding wheels) is rolled as an integral part of the upper portion of steel floor plate. Result: ALGRIP keeps men's feet safe and secure—even when the surface is wet—even on steep inclines.

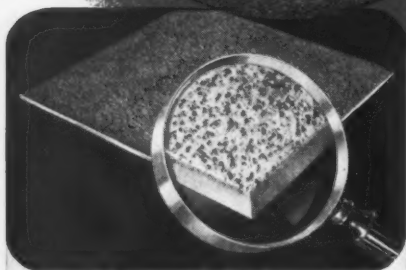
Lighter—Stronger—Needs No Maintenance

A. W. ALGRIP is the only abrasive rolled steel floor plate. It retains its non-slip qualities for a lifetime, because as the surface wears, new abrasive particles are constantly exposed. ALGRIP needs no maintenance, and because it is rolled steel it is stronger than other abrasive floorings and can withstand severe abuse without cracking or breaking. Then, too, thinner sections may be used without reducing load carrying capacity.

Over 1001 Plant and Product Uses

ALGRIP has literally hundreds of safety applications—on factory floors, ramps and loading platforms, railroad rolling stock, aboard ship and on busses, trucks and all stationary and mobile structures.

Safety Engineers, Architects, Plant Owners and Purchasing Agents specify A. W. ALGRIP for maximum safety and long life, and so will you when you know the full story. Write today for our free 8-page, fully illustrated booklet.



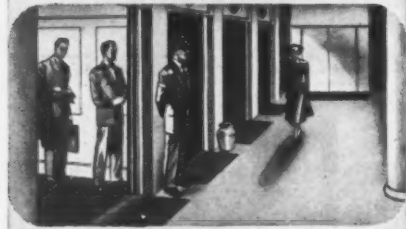
The magnified section of A. W. ALGRIP shows the even distribution of abrasive grain in the upper portion of the rolled steel floor plate.



FACTORY FLOORS



RAMPS AND PLATFORMS



ELEVATOR FLOORS AND SILLS

THERE'S NEVER A SLIP ON **A.W. ALGRIP**

**FREE**

Mail coupon today for this 8-page booklet. It's packed with information on maximum sizes, load carrying capacities, etc.

**A.W. ALGRIP** ABRASIVE ROLLED STEEL FLOOR PLATE  
A Product of **ALAN WOOD STEEL COMPANY**  
Conshohocken 3, Penna.

Gentlemen:

I am interested in A. W. ALGRIP. Please send me your 8-page booklet.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate  
Billets • Plates • Sheets • Strip • (Alloy and Special Grades)



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**Arnold Kruckman, Washington Editor**  
 1120 Vermont Ave., N. W.  
 Washington 3, D. C.  
 Telephone DIstrict 8822

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# This Month in WESTERN INDUSTRY

VOLUME XV

FEBRUARY, 1950

NUMBER 2

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Yes, They're Funny  
 Thoughts Go Forward, Too

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## Front Cover

Rubber products are a sizable Western industry. In making beachballs at the W. J. Voit Rubber Corp., in Los Angeles, slabs of solid-color rubber are fed between rollers on the opposite side of the calendar pictured on the cover, and variegated six-color sheet rubber comes out automatically.

# R: Tensilite for tender feet



"BUSHMAN", the 550 pound giant Gorilla, feature attraction of one of our largest zoos, is a tough character. When he's in a playful mood his enthusiasm is boundless. He likes to swing from the rafters and swing across his cage. Sudden, grinding stops on the concrete floor tore Bushman's feet and he lost his spirited enthusiasm.

PIONEER RUBBER MILLS and zoo officials are now taking care of Bushman's feet. Type "S" Tensilite Chute Lining has been installed as flooring in his cage. Just as it cushions the shocks of so many of industry's problem-child materials, so does it eliminate the destructive abrasion on Bushman's feet.

Certain definite characteristics of Tensilite — PIONEER'S tough resilient, abrasion-resisting rubber compound — meet perfectly the requirements of a host of applications. For example, in chute lining for gravel handling, Tensilite

outlasts steel 5 to 1 (some users report 10, and 15 to 1); it cuts fatigue by its sound-deadening qualities.

Tensilite is available in two types to meet specific operating conditions. Type "S" is famous for its abrasive-resistant qualities in handling heavy, destructive materials, as well as emery-like "fines." Tensilite Type "M" was especially developed for use under conditions involving excessive heat, oil or continuous exposure to strong sunlight and oxidation.

Wherever Tensilite has been recommended and used, it has cut operational costs and saved many a maintenance dollar. If the materials you handle include any or all of the life-shortening characteristics mentioned, Tensilite can be your answer to lower cost materials handling. Your PIONEER distributor is ready to make money-saving recommendations based on your problems. PIONEER RUBBER MILLS' engineering service stands behind his advice.

#### Distributors:

SEATTLE • TACOMA Washington Belting & Rubber Co.  
PORTLAND • EUGENE . . . Munnell & Sherrill, Inc.  
KLAMATH FALLS . . . Klamath Machinery Co.  
SPOKANE • BOISE . . . Intermountain Equipment Co.  
SALT LAKE CITY . . . National Equipment Co.  
DENVER . . . Western Belting & Packing Co.



## PIONEER RUBBER MILLS

BELTING • HOSE • PACKING • RUBBER COVERED ROLLS

PIONEER RUBBER MILLS • 345-53 SACRAMENTO ST. • SAN FRANCISCO 11 • BRANCHES: LOS ANGELES • CHICAGO • ST. LOUIS • FACTORIES: PITTSBURG, CALIF.

## HERE'S A SPECIALIST IN BUILDING EMPLOYEE-MORALE!



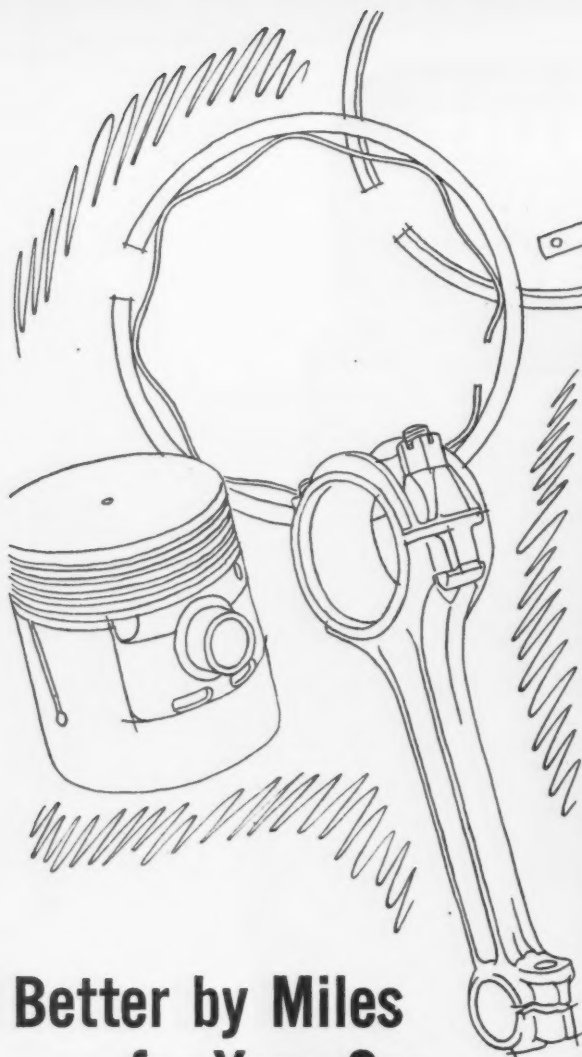
No question about it . . . a good employee-security plan is a tremendous morale-builder.

The *right plan* can assure maximum returns in a feeling of security among those who work for you. Your insurance agent or broker is an insurance *specialist*. Let him help you select the group insurance plan which will provide you the *greatest* return in efficiency and job-satisfaction. Consult him *today!*

*This message published by one of the recognized companies underwriting modern group insurance plans —*  
CALIFORNIA-WESTERN STATES LIFE INSURANCE COMPANY

**GET *Better* ACQUAINTED  
WITH YOUR INSURANCE  
AGENT OR BROKER!**

**He Can Be a Valuable  
"Key-Man" In Your Business**



## Better by Miles for Your Car

Because it's longer lasting—doesn't break down even under tough winter driving conditions—Veedol means more miles of better driving. Low pour-point Veedol, 10W and 20W, flows freely at the lowest temperatures. That means you get faster cold weather starting and warm-up, smoother engine performance, complete lubrication,



*Call your Associated Representative for expert help on any lubrication problem*

# VEEDOL

## The world's most famous motor oil

and real winter protection for your car.

Veedol, famed as "The Aristocrat of Motor Oils," is made from 100% pure Pennsylvania base stocks. It is additive treated for extra premium quality. The Veedol film of protection means longer engine life. Veedol is available in SAE Grades 10 to 70.

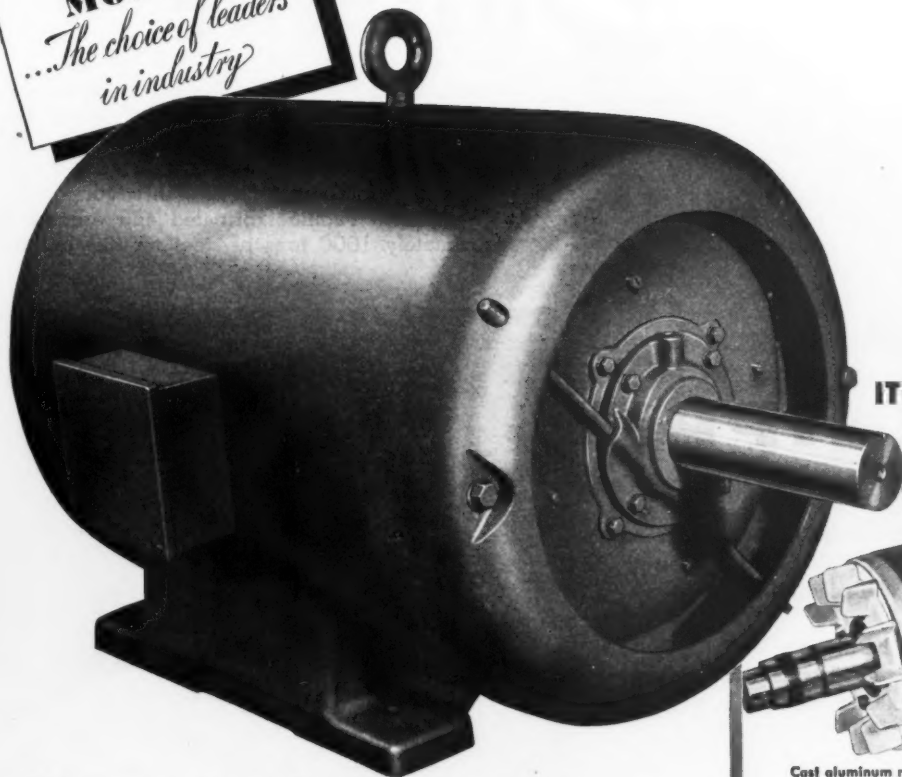


**TIDE WATER  
ASSOCIATED  
OIL COMPANY**

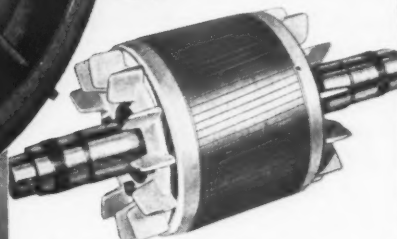


**WAGNER  
MOTORS**

*...The choice of leaders  
in industry*



**IT'S WAGNER**  
*because:*



Cast aluminum rotors, pioneered by Wagner, provide inherent mechanical and electrical characteristics that add quality and dependability to Wagner type CP Motors.

## **Wagner Totally-enclosed Motors best for really dirty jobs!**

Wagner totally-enclosed fan-cooled motors are designed for a particular purpose—to operate efficiently and safely under conditions that would quickly damage an ordinary open type motor. In really dirty jobs—in atmospheres filled with dust, fumes, moisture, abrasives, steel chips and other harmful elements—these *protected* Type CP Motors keep on working, delivering dependable power with no maintenance other than periodic lubrication. Wagner totally-enclosed fan-cooled motors are varied electrically to suit a wide variety of application requirements.

Bulletin MU-185 gives complete information on Wagner Motors. Twenty-nine sales and service branches, in principal cities, are ready to help you on any motor problem. In addition, almost 500 authorized motor repair shops provide speedy, nationwide service facilities.



The rugged frame, used on Wagner type CP Motors, has extra large air ducts around the entire stator to prevent clogging and to permit plenty of fan-driven air to cool the motor.

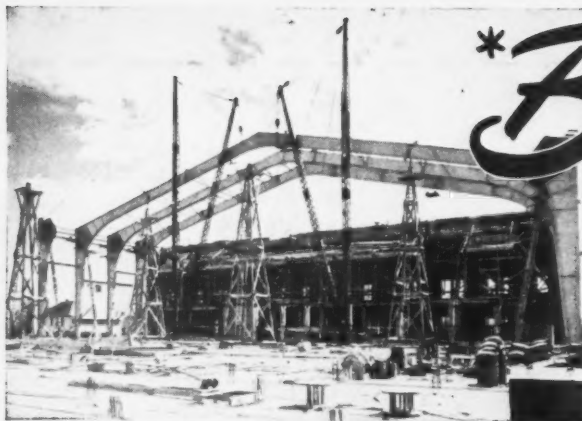
**Wagner**  
**Electric Corporation**

EST. **WE** 1891

**WAGNER ELECTRIC CORPORATION**  
6493 Plymouth Ave., St. Louis 14, Mo., U.S.A.

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES  
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

**BRANCHES IN 29 PRINCIPAL CITIES**



## \* BUILDING

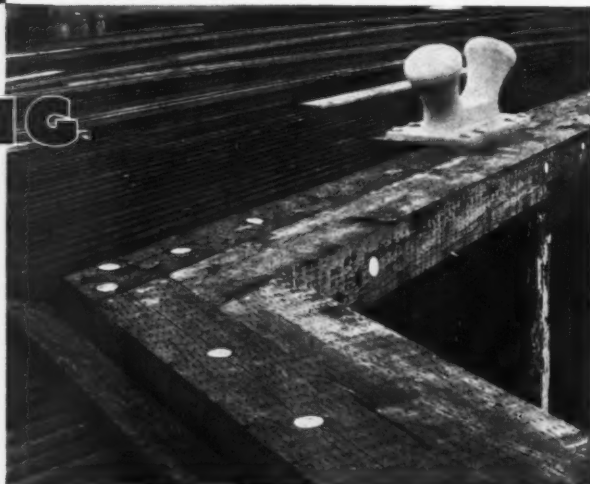
One of the largest rigid steel-frame structures in the nation will be the Oregon State College Pavilion shown here during erection. Designed to seat 10,000 people, it has a height of 84 ft, a length of 260 ft, and a clear-span width of 222 ft.

Bethlehem Pacific fabricated and erected approximately 1000 tons of steel for this building.

## \* SHIPPING

A timber pier in the timber country, this structure is part of the new waterfront improvement program for the Port of Portland. 1100 ft long and covering 180,000 sq ft, the pier will readily accommodate three vessels at a time.

More than 50 tons of Bethlehem Pacific galvanized timber bolts, button-head bolts, track spikes, and boat spikes were used to secure the timbers and rails of this pier.



## \* IRRIGATION

Casting alternate concrete sections of a 1010-ft siphon of the Delta-Mendota Canal in the Central Valley Irrigation Project. The finished tube will have an inside diameter of more than 24 ft and will carry water under a creek and a highway at Tracy, California.

Bethlehem Pacific has supplied many thousand tons of reinforcing bars for this and other United States Bureau of Reclamation projects.

*\* with steel made by Bethlehem Pacific*

Bethlehem Pacific, with an ingot capacity of 650,000 tons per year, produces steel in many forms for the growing industries and projects of the West. This company's three steelmaking plants are located at Los Angeles, South San Francisco, and Seattle, each in the center of major industrial regions.

**BETHLEHEM PACIFIC COAST STEEL CORPORATION**

Sales Offices: San Francisco, Los Angeles, Portland, Seattle, Honolulu



**BETHLEHEM PACIFIC**



# How Big is the CORE



# of your POWER apple?

Densheath Type TW Building Wire with its special thermoplastic insulation is sound production insurance in any plant. It will not support combustion, is long-aging, impervious to acids, oils and alkalis. It is recognized by the National Electrical Code for circuits up to 600 volts and temperatures up to 140° F. . . . and for wet and oily locations. Being light weight, with a smooth, slick finish and without braid, Densheath pulls through easier . . . resists abrasion. Permanent, bright colors for quick circuit identification. Write for literature.

This is important, too—for rewiring in existing raceways, the Code recognizes the smaller diameter of Densheath TW and permits more conductors to be pulled in the same size conduit. Here is a typical case—

## ½" CONDUIT

### Type R



3 #10 Wires

### Type TW



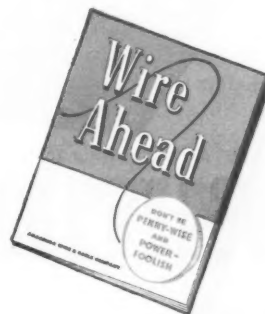
6 #10 Wires

How MUCH of the electric power you pay for do you *throw over your shoulder* through overloaded, overextended, obsolete, inadequate wiring?\*

Avoid wasting power. Find present losses and safeguard future expansion. Talk to your plant power engineer, consulting engineer, electrical contractor, wholesaler or utility power salesman. It's their job to advise and protect you against slow-downs and shut-downs that mean unproductive wages, lost production, spoilage.

47420

**\*WIRE AHEAD . . .** a comprehensive discussion of preventive maintenance, points out the symptoms of inadequate wiring, presents detailed plans for anticipating electrical demand. Forty-eight factual pages of practical information and suggestions free on request.



## ANACONDA WIRE & CABLE COMPANY

25 Broadway, New York 4, N. Y.



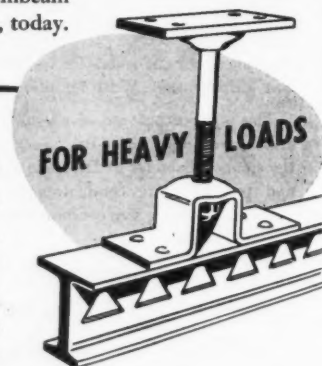
To its wide range of Trambeam materials-handling systems, Whiting now adds a design for light-load applications — the new "T-Beam" Type Trambeam.

Like conventional Trambeam, the new T-Beam consists of a one-piece rail section of high-carbon steel for extra strength without extra weight. It has a flat tread of exceptional wearing quality. In addition, it is flexibly suspended to prevent bending of the hanger rods and to equalize wheel loads.

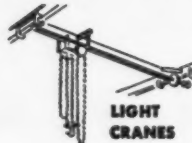
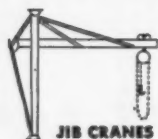
T-Beam systems offer an economical solution to the light-load handling problem. They have all the Trambeam advantages and are interconnectible with heavier Trambeam systems. Write for full information, today.

**WHITING CORPORATION**  
15688 Lathrop Ave., Harvey, Illinois

Offices in Chicago, Cincinnati, Detroit,  
Los Angeles, New York, Philadelphia, Pittsburgh,  
and St. Louis. Agents in other principal cities.  
Canadian Subsidiary: Whiting Corporation  
(Canada) Ltd., Toronto, Ontario. Export  
Department: 30 Church St., New York 7, N. Y.



# WHITING TRAMBEAM



**ALSO—Foundry Equipment  
Railroad Equipment  
Metal-Working Machinery  
Swenson Evaporators  
and Spray Dryers  
Food Freezers**



# Another BWH First!



- Oil and Grease Resistant Cover
- High Tensile Steel Wire Braid
- Heat and Steam Resistant Compound
- New Wire Braid Tube

## NEW CONCORD #20 STEAM HOSE

(with Wire Braid Tube!)

## BREAKS ALL PERFORMANCE RECORDS!

1. During grueling test, Concord #20 Steam Hose "took it" for 1980 continuous hours of service at 200 lbs. steam pressure!
2. No interruption . . . full flow of steam was maintained during the entire test period. Pressure remained constant at all times!
3. Absolutely no evidence of hardening or swelling of the tube!
4. Amazing new construction locks tube between two braids of wire . . . makes recoupling quick and easy!
5. Cover is oil, grease, heat, sun and abrasion resistant!
6. Flexible and DURABLE . . . Your nearest BWH distributor will be glad to demonstrate the whip-like flexibility of Concord #20.

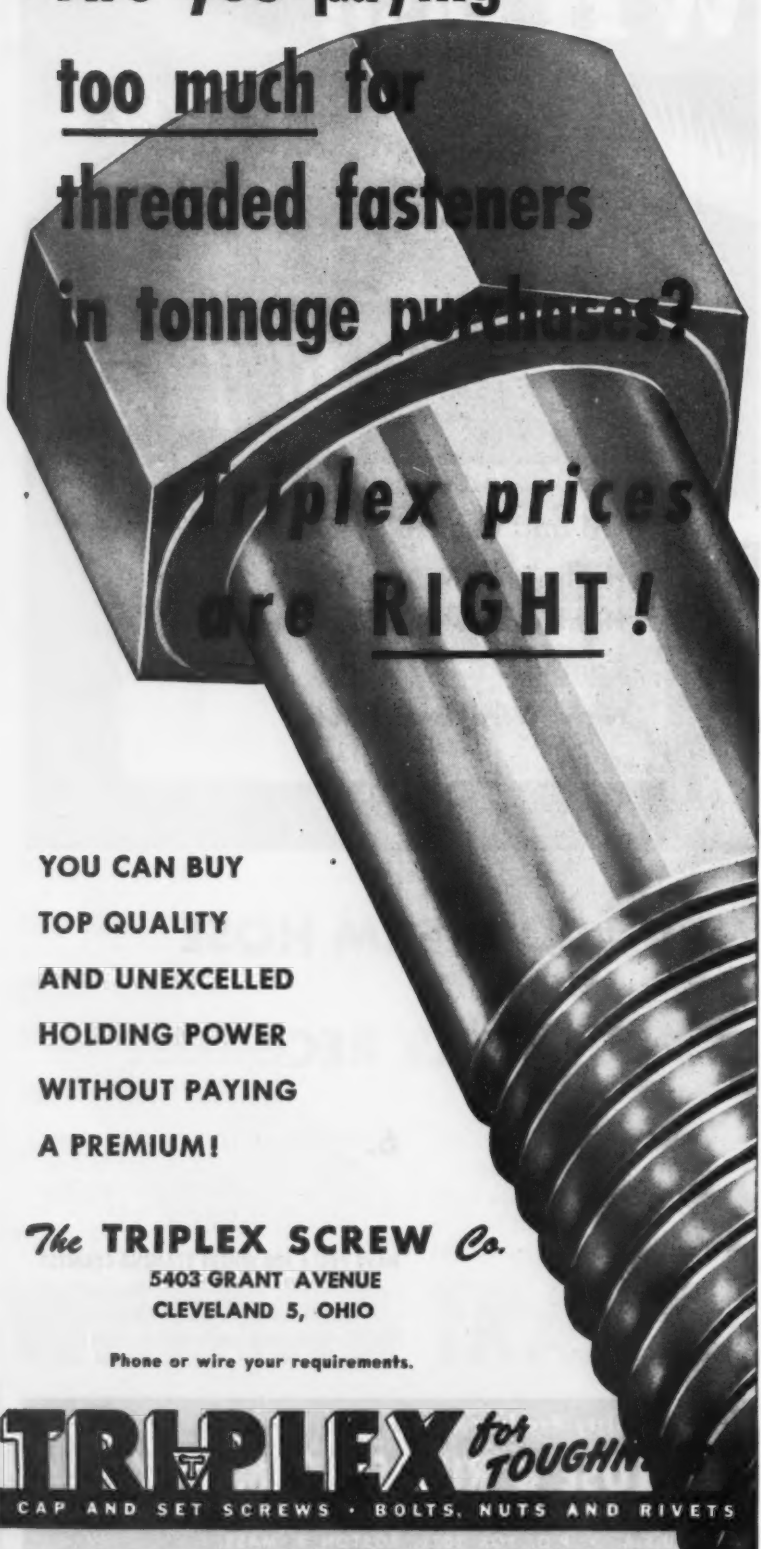
**HAVE YOU A JOB WHERE STAMINA COUNTS?**  
Bring us your toughest problems. We're specialists in solving them. Consult your BWH distributor or write us direct.

Another Quality Product of

### BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all Principal Cities

PLANT: CAMBRIDGE, MASS., U.S.A. • P.O. BOX 1071, BOSTON 3, MASS.



**Are you paying  
too much for  
threaded fasteners  
in tonnage purchases?  
Triplex prices  
are RIGHT!**

**YOU CAN BUY  
TOP QUALITY  
AND UNEXCELLED  
HOLDING POWER  
WITHOUT PAYING  
A PREMIUM!**

**The TRIPLEX SCREW Co.**  
5403 GRANT AVENUE  
CLEVELAND 5, OHIO

Phone or wire your requirements.

**TRIPLEX** *for TOUGHNESS*  
CAP AND SET SCREWS • BOLTS, NUTS AND RIVETS

#### **Metal Trades Benefit Plan**

A broad plan of employee benefits is now in the working agreement between the California Metal Trades Association and the Machinists, (Independent) and the Moulders and Metal Polishers, (AFL) covering some 5,500 employees working for some 195 employers in Northern California.

The program is an old-line insurance package, standardized over many years of experience. Included as benefits to employees are, as reported by the association:

"Group life, accidental death and dismemberment, and medical expense insurance for employees. The cost of this insurance is paid for entirely by the employer, except during lay-off, leave of absence, etc.

"Group medical expense insurance for dependents of employees. The cost of this insurance is paid for entirely by the employees, who apply and make the required contribution. Maximum cost, \$3.50 per month, all dependents.

"Disability insurance under a voluntary plan adopted by the employer. The cost of this is paid for by the 1 per cent payroll tax that the employees would otherwise have to pay to the State for benefits that are considerably less liberal.

Total cost of plan of employees, 1 per cent of payroll.\*

Total cost of plan to employers, \$3.50 month, per covered employee.

Method of handling; money collected by association from individual employers. This is passed along to insurance company underwriting the plan. Employee payments are made by association, using draft on insurance company and immediately after claim properly attested is received.

\*Note: For employee, all coverage; not including dependents.

#### **Stockton Naval Supply Wins Fire Award**

Stockton Naval Supply Annex has won first place for Naval industrial activities in the 26th Annual National Fire Prevention Week Contest.

More than 3,000 civilian and military entries from Canada and United States competed in the contest. Top place, won by the Stockton base, was in the field of Naval Industrial Activities.

This contest, sponsored by the Fire Protection Association and National Board of Fire Underwriters, determined those activities, military and civilian, whose fire prevention records excelled for the year.

ready for any emergency



You can rely on REPUBLIC to meet your supply and service requirements in *any* emergency . . . not tomorrow but today! REPUBLIC is as close as your telephone, 52 weeks a year to assure you the best service possible in the shortest time. REPUBLIC maintains a complete inventory . . . piping, tools, rubber, wire rope and industrial supplies . . . an inventory carefully stocked to meet your exact requirements. Strategically located field stores cut time between order and delivery to an absolute minimum. *Remember, the products you buy are no better than the company that sells and services them . . . another reason why it pays to rely on REPUBLIC!*

**CALL REPUBLIC**

**THE REPUBLIC SUPPLY COMPANY OF CALIFORNIA**

**Piping • Tools • Rubber • Wire Rope • Industrial Supplies**

Executive Offices: 2600 SOUTH EASTLAND AVE., LOS ANGELES 22, CALIFORNIA

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COMPANY SERVING WESTERN INDUSTRY

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LONG BEACH

STOCKTON

SAN JOSE

VENTURA

GARDENA

AVENAL

FRESNO

SANTA MARIA

CUYAMA

NEWHALL

TAFT



**25,000 cases  
of coffee  
packed in  
just  
2 weeks**



### **Case History Of Another Typical Shipping Problem Solved By Stanley Steel Strapping**

**The Problem:** A leading New York coffee company had to pack 25,000 cases for export in just two weeks. There was only a limited time for preparation, and no experienced personnel to handle the job.

**The Solution:** Specifications called for three straps per carton. Stanley recommended three Mechanical Arm Mounts with Stanley Ace Strapping Tools to be set up at the conveyor as shown, with Model N Reel Stands behind the operators. Running 24 hours a day, in spite of operators' inex-

perience, job was finished with half a day to spare.

That's typical of the way Stanley Steel Strapping saves time, labor and money shipping almost any type of product. Stanley Steel Strapping is quick and easy to apply—gives greater protection to goods in transit—cuts packing costs to rock bottom. Interested in the savings it can make in *your* Shipping Room? Write for complete information or have a Stanley representative call now! The Stanley Works, Steel Strapping Division, 234 Lake Street, New Britain, Connecticut.

Seattle Office, 618 2nd Avenue • San Francisco Office, 681 Market Street • Los Angeles Office, 108W. 6th Street



Reg. U.S. Pat. Off.

**STEEL STRAPPING  
AND CAR BANDING SYSTEMS**

**HARDWARE • HAND TOOLS • ELECTRIC TOOLS • STEEL STRAPPING**



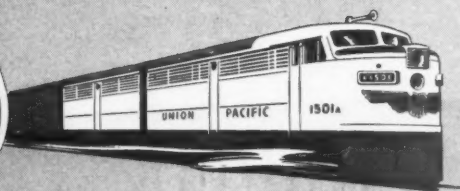


# Getting the jump on the other fellow!

**T**here's nothing new in the fact that transportation and marketing go hand in hand.

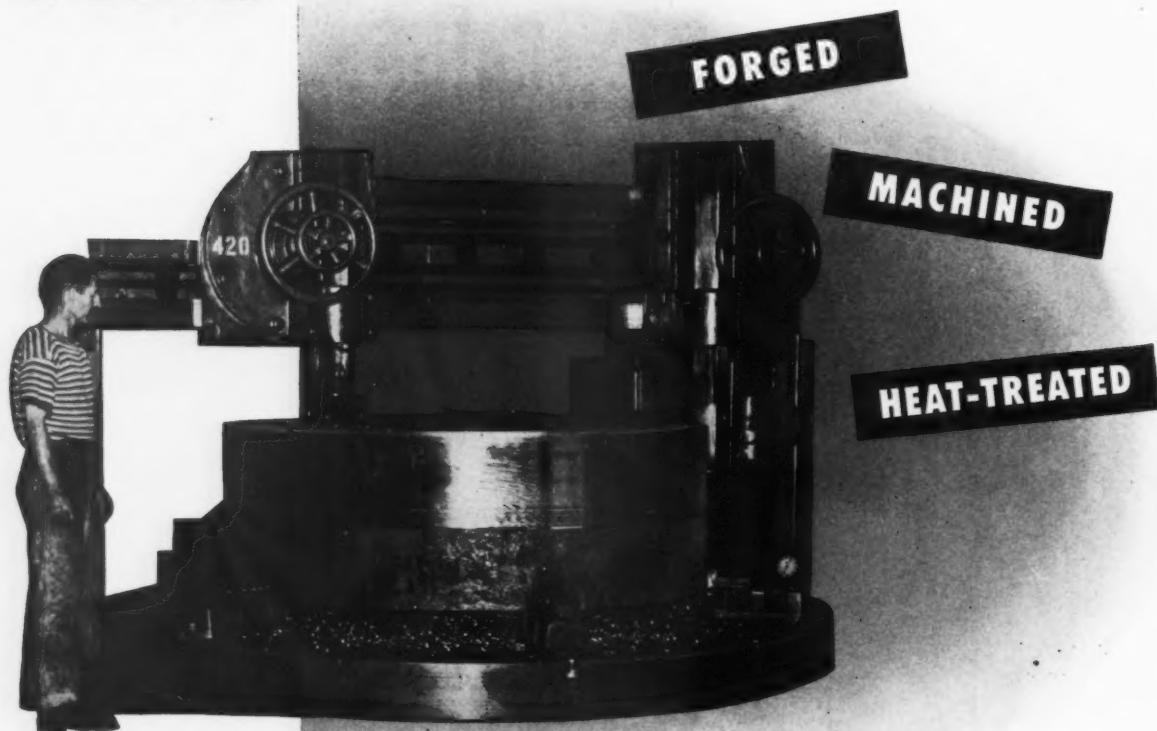
Union Pacific realizes the importance of on-time deliveries so that raw materials and finished products will reach destinations when the demand is most urgent. The shipper whose consignment gets there first has the jump on competition.

By means of dieselized locomotives . . . classification yards that cut switching time in half . . . and other facilities . . . Union Pacific speeds the movement of freight on its rails. It pays to ship "U. P."



**BE SPECIFIC: *Ship* UNION PACIFIC**

# THIS is a job that National did



When a prominent mining company required 18,000-lb. shells for crushing rock, we rolled up our sleeves and went to work. We produced the steel in our electric furnaces. Every step of the job was done at National's Torrance Plant, "The West's largest integrated

machinery manufacturing plant." Next time you need expert heavy manufacturing help, call us. In the meantime to get acquainted with our facilities write for your free copy of our illustrated booklet, *From Melting Furnace to Finished Product*.



THE **NATIONAL**  
SUPPLY COMPANY

**THE NATIONAL SUPPLY COMPANY**  
Industrial Products Division  
Torrance, California, Los Angeles Area  
IDEAL PRESSED STEEL FORGINGS,  
BILLETS AND LARGE BARS

MELTING • FORGING • CASTING • MACHINING  
HEAT TREATING • ASSEMBLING • WELDING • TESTING

## CALENDAR OF MEETINGS

- February 2—Workshop conference on building new community payrolls, University of Santa Clara. Contact Clark Galloway, Calif. State Chamber of Commerce, San Francisco.
- February 2-4—Colorado Mining Ass'n, annual meeting, Shirley-Savoy Hotel, Denver.
- February 9-10—Western Pine Association, at San Francisco (annual meeting).
- February 10-11—Oregon State Bottlers Association, at Benson Hotel, Portland. Contact M. B. Ruvinsky, AT 2823, Mt. Hood Beverage Co.
- February 16-17—Pacific Coast Gas Association, Technical Section, Accident Prevention Group Conference, at Mar Monte Hotel, Santa Barbara. E. E. Taylor, Southern California Gas Co., sponsor and conference chairman.
- February 21-23—Western States Meat Packers Ass'n., at San Francisco.
- February 23-24—Pacific Coast Board of Intergovernmental Relations, at Portland, Oregon. Contact Joe Rupley, Bureau of the Budget, Federal Office Building, San Francisco.
- Feb. 23-24—Council of Profit Sharing Industries, at Los Angeles.
- February 24—California Stripper Well Association, at Los Angeles.
- February, last week — N. W. Association of Ice Industries, Tacoma, Wash. Contact P. P. Pierson, MA 8161, Tacoma.
- March—Pacific N.W. Advisory Board, at Portland, Oregon. Contact F. T. Westmeyer, 624 Vance Building, Seattle, Washington.
- March 2-4—Society of the Plastics Industry Pacific Coast Annual Conference, Hotel Del Coronado, San Diego, Calif.
- March 10-17—Timber Production Manufacturers' Association, at Spokane, Wash. Contact George Tichy, MA 2259, Spokane.
- March 12-14—Northwest Cannery Association (corrected date), Multnomah Hotel, Portland, Ore. Contact A. L. Hobart, 514 Board of Trade Bldg., Portland, AT 7569.
- March 13-15—Northwest Public Power Association at Hotel Davenport, Spokane. Contact R. B. Smith at RI 7151, Spokane.
- March 16-19 — Electrical Maintenance Engineers Ass'n, at Los Angeles.
- March 17-18—Western Highway Institute, at Hotel del Coronado, San Diego. R. H. Cutler, Salt Lake City, chairman.
- March 21-22—Northwest Wood Products Clinic, at Hotel Davenport, Spokane. Contact Bob McCann at MA 1393, Spokane.
- March 28-31 — Intermountain Logging Conference, at Hotel Davenport, Spokane. Contact Charles Keim, Kalispell, Montana.
- April 17-19—Pacific N.W. Bakers Association, Multnomah Hotel, Portland, Ore. Contact J. C. Crawford, Weatherly Bldg., Portland, CA 6450.
- May—Western Traffic Conference, at Portland, Ore. Contact F. W. Ashton, 408 Oak Lane, San Gabriel, Calif.
- May 11-12—American Petroleum Institute, Production Division, at Los Angeles.

## EDITORIAL COMMENT

### Yes, They're Funny

**A**RT LINKLETTER says people are funny. He ought to know, judging by the fool things he gets them to do on his radio program. We wonder if he has taken cognizance of the fact that as soon as something becomes government-owned, the citizens and their representatives think that it doesn't have to fight for business.

A case in point is the Municipal Railway in San Francisco, which recently blossomed out in flocks of new trolley coaches and gasoline buses, supplanting rickety old street cars. But there was no compensating gain in revenue, because too many people still insisted on using automobiles instead.

We queried the Public Utilities Commission as to why it didn't follow the tactics of the Southern Pacific, which has plastered the highways with signs reading "Next time, take the train. Relax." We learned that the Board of Supervisors, the city's governing body, had never allotted a cent for advertising for the Municipal Railway until last year, when they decided to squander all of \$5,000.

Our sympathy was with the Public Utilities Commission, which spent most of the money for 1,000 two-color posters extolling the economy of leaving your automobile home and avoiding parking fees, dented fenders, etc. Or rather, it was until we discovered the posters were all put *inside* the trolley coaches and buses, where only existing patrons could see them, instead of on the outside, where automobilists might pay some attention. However, a friend pointed out to us that, to a motorist boxed in behind slower moving vehicles, such posters might be just an aggravation instead of a sales message.

Perhaps he was right; maybe the big sales problem is to hang onto the customers you now have. But somehow we can't imagine an up-and-coming privately owned utility taking defeat lying down, like the San Francisco supervisors.

### Thoughts Go Forward, Too

**H**OW many of us, if it came to a showdown, would actually go back to the "good old days," if he could? Remember Hans Christian Andersen's fairy tale, of the man who suddenly found himself living 200 years earlier (or was it 100?), and in the middle of a dark street paved mostly with mud puddles and lighted by one flickering lamp or torch in the distance?

What man has been freed from in just a half century, let alone 200 years! And in how many ways his thought has been lifted and refined! It struck us forcibly back in November, reading a news item from San Jose about how the members of the California football team spent the evening before the Big Game with Stanford. Some went to the movies, others to a night football game between a pair of lesser teams, but some, the number not stated, took in a Yehudi Menuhin violin concert. Half a century ago, or even quarter of a century ago, how many football players would be taking in a classical violin concert?

There are ways to reach the heart of the management-labor problem, and the Russian problem, too, that run deeper than any methods now being employed. Like good music, they will have their effect in due time.



**"Courteous treatment by salesmen" . . . that's only  
one of the things we mean by Service Plus!**

BARS • PLATES  
STRUCTURALS • SHEETS  
STRIP • REINFORCING BARS

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STAINLESS  
ALLOY STEELS  
ALUMINUM

\* \* \*  
TOOLS • EQUIPMENT  
MACHINERY

● A recent survey of our customers impressed us again with the fact that "a company is only as good as its personnel!" Many customers told us that they like to do business with United States Steel Supply Company because of the courteous attention they receive from our salesmen. We're glad their efforts are appreciated and we assure you that every order you place, large or small, will receive prompt, courteous attention from men who know their business.

*Service Plus* is our pledge to handle your order as you want it handled. Our capacity to serve you includes a complete range of steel products, an unrivaled reputation for prompt delivery, and years of experience in providing the most complete steel service available.

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WITH US, YOU GET  
**Service  
Plus!**

**UNITED STATES STEEL  
SUPPLY COMPANY**



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**UNITED STATES STEEL**



# THE WESTERN OUTLOOK . . . News . Statistics

1

**General economy firm; Standard will go on day-to-day crude purchases; Cheap oil slashes gas profits; Aluminum plants resume full production; Western aircrafters get 75 per cent of billion dollar government orders**



**P**ROBABLY the most reassuring factor in the general Western picture is that the turn of the year failed to show any significant outstanding weakness. Things could have been better in many industries, but they could have been a lot worse, and the unemployment situation, which alarms many people, is mostly a case of too many new people in the West.

A 22 per cent decline in number of new housing units authorized in the first nine months of 1949 (as compared with 1948) in the 12th Federal Reserve District was very likely a major factor in slowing down industrial output in the West for a considerable portion of last year. October figures were above those of 1948, however, and the Federal Reserve Bank's forecast made in December was that fourth quarter might be equal to or better than third quarter totals, a reversal of normal seasonal behavior and a marked decline from the toboggan slide performance late in 1948. Detailed October figures were given in the January issue of WESTERN INDUSTRY.

First quarter carloading forecasts by the Pacific Coast Transportation Advisory Board are for a 1.7 per cent increase over same period in 1948. Chief declines, outside the perishable field, are predicted in agricultural implements and vehicles, machinery and boilers, coal and coke, ore,

concentrates and other metals. On the plus side the large increases are cotton, cottonseed, fertilizer, wool, forest products, paper, paperboard, and prepared roofing.

Among the bits and pieces which may be picked up on the Western scene are: California manufacturing employment for November off 3.7 per cent from 1948; Montana (where population shrank in wartime) had a three-year increase in employment broken in April, 1949, when the primary metal market slumped, but there has been some recovery since; New Mexico's continued gain in retail sales is interpreted by some as due to the continuing high level of farm income, and that a change from an extensive to an intensive agriculture seems to be under way, in other

words, from livestock to farm crops; Colorado's October employment figures (Colorado now reporting statistics again on cooperating basis with BLS) show 35 per cent decline in metal mining from 1948, caused by decline in metal prices, and 35 per cent in coal mining, mostly due to labor disputes. Industrial and home construction in the state up 12 per cent over 1948.

Unemployment: about 4 per cent more workers in Washington having to rely on their unemployment insurance during the 1949 benefit year; compensation paid in

(Continued on page 23)

## Business Activity Indices in Per Cent of 1935-39 Average

|                  | September | October | November |
|------------------|-----------|---------|----------|
| 1 Arizona        | 312.0     | 315.7   | 310.1p   |
| 2 California     | 226.5     | 224.5   | 222.1p   |
| 3 So. California | 272.7     | 271.7   | 267.5    |
| 4 Pacific N.W.   | 214.2p    |         |          |
| 5 Puget Sound    | 201.7     |         |          |
| 6 Inland Empire  | 201.9     |         |          |
| 7 Lower Columbia | 230.5p    |         |          |

- 1) Valley National Bank (Phoenix) index, based on a weighted composite of retail sales, agricultural income, and employment in mining, manufacturing and construction, and seasonally adjusted. 1940 = 100.
- 2) Wells Fargo Bank & Union Trust Co., index based on the following components: Industrial production, freight carloadings, bank debits, department store sales (weighted 4, 3, 2, 1, respectively, and adjusted seasonally).
- 3) Security-First National Bank of Los Angeles index, based on the following components and weights, and adjusted seasonally: department store sales, 15; building permits, 5; Los Angeles bank debits, 20; residential city bank debits, 5; agricultural city bank debits, 5; industrial employment, 20; industrial power sales, 13; railroad freight volume, 6; telephones in use, 7; real estate activity, 4.
- 4) Index compiled by Bureau of Business Research, University of Washington. Basis of compilation not indicated.
- p) Preliminary estimate.

## MANUFACTURING EMPLOYMENT

Estimated Number of Employees—Source: U. S. Bureau of Labor Statistics and State Agencies

|           | WASHINGTON |          | OREGON  |         | CALIFORNIA |         | TOTAL PACIFIC |           |
|-----------|------------|----------|---------|---------|------------|---------|---------------|-----------|
|           | 1948       | 1949     | 1948    | 1949    | 1948       | 1949    | 1948          | 1949      |
| August    | 183,100    | 171,500* | 156,000 | 138,200 | 772,800    | 757,900 | 1,111,900     | 1,067,600 |
| September | 189,900    | 173,700  | 121,500 | 138,700 | 802,900    | 752,600 | 1,114,310     | 1,065,000 |
| October   | 188,650    | 167,900  |         | 135,300 | 769,200    | 737,600 |               | 1,040,800 |
| November  |            |          | 134,400 | 131,100 | 738,300    | 711,300 | 1,061,350     | 1,010,300 |

\* Preliminary.

|           | MONTANA |         | IDAHO  |        | WYOMING |       | COLORADO |        | NEW MEXICO |        | ARIZONA |        |
|-----------|---------|---------|--------|--------|---------|-------|----------|--------|------------|--------|---------|--------|
|           | 1948    | 1949    | 1948   | 1949   | 1948    | 1949  | 1948     | 1949   | 1948       | 1949   | 1948    | 1949   |
| August    | 18,000  | 18,900  | 25,400 | 21,700 | 6,900   | 6,400 | 55,100   | 9,850  | 10,300     | 15,100 | 14,200  | 29,400 |
| September | 18,100  | 19,100  | 26,700 | 21,700 | 6,800   | 6,200 | 56,900   | 9,850  | 10,500     | 13,900 | 14,200  | 33,000 |
| October   | 20,100* | 19,800* | 24,300 | 22,400 | 7,240   | 7,700 | 63,150   | 51,900 | 9,500      | 10,600 | 14,800  | 14,700 |
| November  |         | 19,600  | 22,600 | 21,600 | 6,880   | 7,300 |          |        | 9,300      | 10,350 | 15,100  | 15,200 |

\* Revised.

## INSURED UNEMPLOYMENT

(Under all programs: figures in thousands. From Social Security Board)

| Week ending | Ariz. | Colo. | Idaho | Mont. | Nev. | N. Mex. | Utah | Wyo. | Total Mtn. | Calif. | Ore. | Wash. | Total Pacific |
|-------------|-------|-------|-------|-------|------|---------|------|------|------------|--------|------|-------|---------------|
| Aug. 27     | 7.3   | 5.4   | 1.4   | 2.3   | 1.7  | 3.0     | 4.7  | .6   | 26.4       | 223.0  | 18.8 | 32.2  | 274.0         |
| Oct. 1      | 6.1   | 4.0   | 2.3   | 2.0   | 2.0  | 2.2     | 4.4  | .5   | 23.5       | 192.9  | 17.8 | 31.6  | 242.3         |
| Oct. 20     | 6.0   | 8.7   | 2.9   | 2.5   | 2.0  | 2.3     | 5.7  | .8   | 30.9       | 200.5  | 23.7 | 41.2  | 265.4         |
| Nov. 26     | 6.0   | 6.1   | 5.1   | 4.5   | 2.6  | 3.1     | 5.4  | 1.3  | 28.0       | 259.2  | 33.3 | 57.4  | 349.9         |

## BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Fed. Res. System in 7 western cities: L.A., S.F., Portland, Seattle, Tacoma, Spokane, and Salt Lake. (Average of Wednesday reports)

| 1949      |       |
|-----------|-------|
| July      | 2,416 |
| August    | 1,920 |
| September | 1,956 |
| October   | 1,961 |
| November  | 1,999 |
| December  | 2,018 |

## BANK DEPOSITS

(In millions of dollars—adjusted)

Daily average month, all member banks in 12th Federal Res. Dist. Demand deposits excluding U. S. Gov't deposits, cash items in process of collection, and interbank deposits.

| 1948      | Net Demand Deposits | Time Deposits |
|-----------|---------------------|---------------|
| August    | 8,453               | 6,178         |
| September | 8,626               | 6,178         |
| October   | 8,714               | 6,184         |
| November  | 8,785               | 6,185         |

## FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states.

(Compiled from Assn. of Am. R.R. weekly reports)

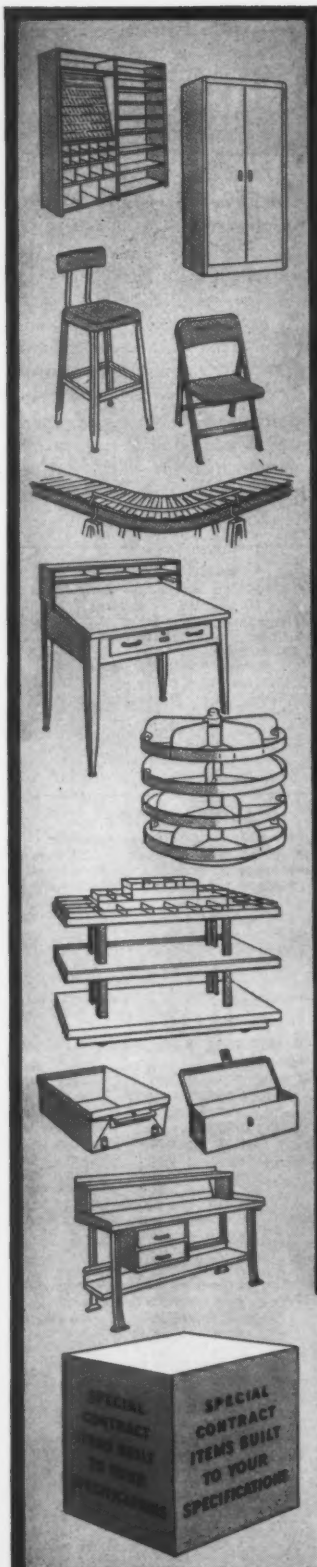
|           | Carloadings |         | Received from Eastern Connections |         |
|-----------|-------------|---------|-----------------------------------|---------|
|           | 1948        | 1949    | 1948                              | 1949    |
| June      | 593,121     | 566,042 | 303,680                           | 280,659 |
| July      | 588,842     | 532,120 | 287,565                           | 260,419 |
| August    | 766,432     | 681,602 | 376,674                           | 341,628 |
| September | 628,156     | 550,529 | 321,399                           | 284,265 |
| October   | 659,069     | 553,399 | 351,521                           | 286,163 |
| November  | 568,698     | 514,986 | 270,504                           | 313,125 |

## TRUCK TRAFFIC

(Number of commercial trucks entering state through border checking stations)

|           | —CALIFORNIA— |        | —ARIZONA— |        |
|-----------|--------------|--------|-----------|--------|
|           | 1948         | 1949   | 1948      | 1949   |
| July      | 14,763       | 14,774 | 19,557    | 21,465 |
| August    | 15,203       | 16,207 | 19,078    | 21,004 |
| September | 14,777       | 15,727 | 18,880    | 21,256 |
| October   | 15,892       | 16,615 | 20,751    | 23,832 |
| November  | 14,789       | 16,360 | 20,401    | 23,116 |
| December  | 13,248       | 15,090 | 19,927    | 21,813 |

|           | UTAH   |        | NEVADA |      | TOTAL MTN. |      |
|-----------|--------|--------|--------|------|------------|------|
|           | 1948   | 1949   | 1948   | 1949 | 1948       | 1949 |
| August    | 29,400 | 29,700 |        |      |            |      |
| September | 33,000 | 33,500 |        |      |            |      |
| October   | 27,500 | 3,400  | 3,000  |      |            |      |
| November  |        | 3,400  | 3,000  |      |            |      |



# LYON

**MAKES**  
more than  
**1500**  
regular cataloged  
items of steel  
equipment . . .

**WILL MAKE**  
special contract  
items to your  
specifications

## LYON METAL PRODUCTS, INCORPORATED

**LOS ANGELES**  
3650 Union Pacific Ave.

**SAN FRANCISCO**  
Room 421 Flood Bldg.

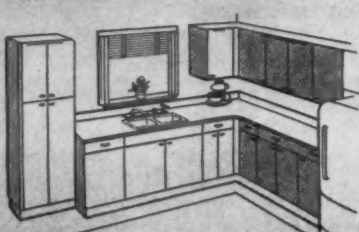
**PORTLAND**  
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**SPOKANE**  
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*Shipment from Pacific Coast Points*

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### A PARTIAL LIST OF LYON PRODUCTS

- |                        |                     |                   |                    |              |                 |                     |
|------------------------|---------------------|-------------------|--------------------|--------------|-----------------|---------------------|
| • Shelving             | • Kitchen Cabinets  | • Filing Cabinets | • Storage Cabinets | • Conveyors  | • Tool Stands   | • Flat Drawer Files |
| • Lockers              | • Display Equipment | • Cabinet Benches | • Bench Drawers    | • Shop Boxes | • Service Carts | • Tool Trays        |
| • Wood Working Benches | • Hanging Cabinets  | • Folding Chairs  | • Work Benches     | • Bar Racks  | • Hopper Bins   | • Desks             |
| • Economy Locker Racks | • Welding Benches   | • Drawing Tables  | • Drawer Units     | • Bin Units  | • Parts Cases   | • Stools            |
|                        |                     |                   |                    |              |                 | • Tool Boxes        |
|                        |                     |                   |                    |              |                 | • Sorting Files     |
|                        |                     |                   |                    |              |                 | • Revolving Bins    |

# THE WESTERN OUTLOOK . . . News . Statistics

2

## WHOLESALESALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

| MOUNTAIN  |                        |        |                     |        |                          |        |                                       |        |                     |        |
|-----------|------------------------|--------|---------------------|--------|--------------------------|--------|---------------------------------------|--------|---------------------|--------|
|           | Automotive<br>Supplies | Change | Electrical<br>Goods | Change | Furn. and<br>house furn. | Change | Groc. and<br>foods exc.<br>farm prod. | Change | General<br>Hardware | Change |
| August    | 2,208                  | — 2    | 3,432               | — 7    | 473                      | +35    | .....                                 | .....  | 2,212               | — 3    |
| September | 820                    | —15    | 3,580               | — 16   | 490                      | +19    | .....                                 | .....  | 2,120               | —12    |
| October   | 1,050                  | —10    | 3,322               | — 9    | 717                      | + 3    | .....                                 | .....  | 2,266               | —14    |
|           |                        |        |                     |        |                          |        |                                       |        |                     |        |
| August    | 2,430                  | —20    | 12,372              | — 18   | .....                    | .....  | 11,182                                | .....  | 5,908               | —26    |
| Sept.     | 1,725                  | —24    | 15,067              | — 16   | 1,693                    | — 4    | 15,295                                | .....  | 6,862               | —14    |
| October   | 2,508                  | —10    | 12,157              | — 15   | 3,137                    | — 9    | 8,705                                 | .....  | 7,567               | —13    |

\*Full-line wholesalers.

\* Full-line wholesalers.

## CONSUMERS' PRICE INDEX

From Bureau of Labor Statistics 100 = 5 yr. Avg. 1935-39

|          | Los Angeles | San Francisco | Portland | Seattle | Denver |
|----------|-------------|---------------|----------|---------|--------|
| Aug. 15  | 166.8       | 173.0         | 170.8    | 170.8   | 170.8  |
| Sept. 15 | 167.1       | 173.0         | 173.0    | 173.0   | 173.0  |
| Oct. 15  | 166.5       | 173.0         | 173.0    | 173.0   | 173.0  |
| Nov. 15  | 166.6       | 173.0         | 171.6    | 171.6   | 171.6  |

## INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS OF COMMODITIES AND BY MONTHS

Bureau of Labor Statistics, Washington 25, D.C. (1926 = 100)

|           | Farm Products | Food  | Hides and Leather Products | Textile Products | Fuel and Lighting | Metals and Metal Products | Building Materials | Chemicals and Allied Products | House Furnishings Goods | Miscellaneous | ALL COMMODITIES |
|-----------|---------------|-------|----------------------------|------------------|-------------------|---------------------------|--------------------|-------------------------------|-------------------------|---------------|-----------------|
| August    | 162.3         | 160.6 | 179.0                      | 137.0            | 129.7             | 168.7                     | 188.2              | 119.7                         | 143.0                   | 109.3         | 153.0           |
| September | 163.1         | 162.0 | 181.1                      | 139.0            | 130.6             | 168.4                     | 189.4              | 117.7                         | 142.9                   | 109.6         | 153.7           |
| October   | 159.6         | 159.6 | 181.3                      | 138.1            | 130.6             | 167.3                     | 189.2              | 116.0                         | 143.0                   | 109.0         | 152.2           |
| November  | 156.8         | 158.9 | 180.8                      | 138.0            | 130.0             | 167.3                     | 189.5              | 116.1                         | 143.4                   | 109.7         | 151.6           |

## INDEX OF DEPARTMENT STORE SALES

Index numbers, 1935-39 daily average=100 with seasonal adjustment. Compiled by Federal Reserve Bank.

|           | Total 12th Fed. Res. Dist. | Southern California | Northern California | Portland | Western Washington | Eastern Washington and northern Idaho | Utah and southern Idaho | Phoenix |
|-----------|----------------------------|---------------------|---------------------|----------|--------------------|---------------------------------------|-------------------------|---------|
| August    | 361                        | 355                 | 416                 | 373      | 312                | 296                                   | 367                     | 322     |
| September | 349                        | 325                 | 397                 | 358      | 317                | 293                                   | 344                     | 311     |
| October   | 344                        | 337                 | 386                 | 367      | 308                | 298                                   | 347                     | 307     |
| November  | 349                        | 319                 | 384                 | 345      | 311                | 298                                   | 342                     | 304     |

(Continued from page 21)

Oregon passed the \$17,000,000 mark for the year in the first week of December, highest since first benefits went out in 1938, and year's total may pass \$19,000,000, or nearly 14 per cent above previous high in 1946, when war workers were changing to peacetime jobs; Utah payments for November 40 per cent above 1948, but veterans' allowances were only one-fourth as large.



Secretary of Commerce Sawyer gave the West a good look-see last fall, and his

recent report on conditions, a very careful and unemotional study, indicated that most of the West's troubles were "growing pains." He did not report anything that would be particularly new to Westerners, except perhaps that unemployment in Colorado, Idaho, Montana, Wyoming and to a lesser extent, Utah, has been running substantially below national levels. In a number of cases export conditions have had an unfavorable effect.

## Electric Energy

Stream flow in the Pacific Northwest has been so good that fears of a power shortage this winter are practically over. Users on interruptible load contracts are back on the line again, notably the aluminum producers, who had to cut back one potline each late in the fall to conserve the energy supply. Load growth in the Northwest is about 9 per cent above a year ago, due mainly to the aluminum industry. Considerable steam power has been required for peaking purposes.

Everywhere else in the West there is a surplus of power. If California should have a dry winter, early pumping would put a heavy load

on the utilities, but with new steam facilities and a good water supply situation at Hoover Dam, there seems to be no possible danger of a short-

age. Total additions to generating capacity in the West in 1950 are estimated at about 10 per cent of the present volume.

## ELECTRIC ENERGY

(Production for Public Use—In thousands of kilowatt hours. Source: Federal Power Commission)

|           | Mountain  | Pacific Northwest | California | Total Pacific |
|-----------|-----------|-------------------|------------|---------------|
| June      | 1,453,761 | 1,470,751         | 1,455,985  | 1,704,943     |
| July      | 1,564,700 | 1,445,233         | 1,662,191  | 1,681,142     |
| August    | 1,502,169 | 1,561,811         | 1,723,442  | 1,812,839     |
| September | 1,471,029 | 1,533,084         | 1,698,555  | 1,789,376     |
| October   | 1,142,483 | 1,336,503         | 1,709,327  | 1,727,287     |

\* Revised.

## Oil

Pointing out that "it's cheaper to store oil in the ground than in tanks above ground," Standard Oil of California has served six stand-by notice it will cancel its purchase contracts with the independent firms which sell it crude oil. From then on it will buy only from day to day, and will take only a percentage of their production, instead of all of it.

The move emphasized statistics showing that all kinds of petroleum products are going into storage, including even stove oil and other cold-weather favorites now in peak demand. The Texas Railroad Commission simultaneously ordered its oil fields to shut down an extra day in January because of oversupply.

Meanwhile drilling activity along the Gulf Coast and in West Texas is keeping up the de-

velopment of new wells at a high level. The oil industry is currently bringing them in at the rate of nearly two new ones for every exhausted well, averaging one producer born every 23 minutes. Average cost per "wildcat" well is \$50,000, although some have cost as much as \$1,000,000. Some 44 dry holes are drilled for every 100 brought into production.

Long-range factors foretell stiffer competition

for U. S. oil by foreign fields now springing into activity. American interests are drilling in the "neutral" zone between Kuwait and Saudi Arabia and may add another rich territory to the producing areas. In Mexico the first well drilled by a U. S. company has struck oil, with rumors still current that the U. S. government may help Mexico finance petroleum development.

(Continued on page 25)

## PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)

(From Bureau of Mines)

|           | CRUDE PRODUCTION (Barrels, daily avg.) | GASOLINE | TOTAL DELIVERIES (Thousands of barrels daily) | ALL PRODUCTS |
|-----------|--|----------|---|--------------|
|           | 1949                                   | 1948     | 1949  | 1948         |
| July      | 907,000                                | 350      | 374   | 1,030        |
| August    | 896,000                                | 373      | 374   | 1,033        |
| September | 898,000                                | 220      | 375   | 819          |
| October   | 877,000                                | 315      | 370   | 1,006        |

**A New**

# AMERICAN BLOWER PLANT

***now nearing completion in San Leandro, California***

To better serve our many Western customers and friends, a new American Blower plant is rapidly nearing completion in San Leandro, California.

Present plans call for the operation of these new facilities to begin in January, 1950.

▲ ▲ ▲

Building the finest equipment for handling air and putting air to profitable use has been American Blower's business since 1881.

Today, time-honored American Blower Air Handling equipment is available for installation in industrial, commercial and

public buildings, stores, public utilities and other important applications.

American Blower products are widely recognized as a better buy because they are built better to last longer and operate at lower costs.

If you would like to know how these fine products can profitably be applied to your business, ask your Heating, Ventilating and Air Conditioning Contractor, or phone the nearest American Blower Branch Office.

Your inquiries are invited.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN  
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of AMERICAN RADIATOR & Standard Sanitary Corporation

*American Blower  
Plants:*

Detroit, Michigan  
(General Offices)

Columbus, Ohio

San Leandro, California

**YOUR BEST BUY**

## AMERICAN BLOWER

**AIR HANDLING EQUIPMENT**

*Serving home and industry*

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



(Continued from page 23)

Britain has announced it will cut down imports of U. S. oil to save dollar exchange and says it expects to have a surplus from its production in British held areas in 1950. Canadian officials report that their country, which now imports nearly 80 per cent of its oil may become self-sufficient within five years, thanks to tremendous growth development now taking place in Alberta and Saskatchewan.

## Gas

For the first time since these statistics have begun to appear in WESTERN INDUSTRY, revenues by utility companies from natural gas sales in the Pacific states have shown a decline from the previous year. Third quarter (1949) reports from the American Gas Association, covering approximately 87 per cent of sales, 88 per cent of revenues and 89 per cent of the customers in the region, show a drop of 1.5 per cent from 1948, due to a decline of 15.3 per cent in industrial revenue. This was occasioned by the drop in oil prices, which in turn forced down gas prices, and also by the fact that a



number of larger users, particularly in southern California, switched to oil fuel when big quantities of distress oil came on the market last summer.

Number of residential customers, often considered an index to population growth, increased

6.7 per cent, or 135,474. Some of this, of course, may be due to apartment dwellers moving to new detached homes.

Utilities in the mountain states did much better on natural gas revenue, showing a gain of 13.4 per cent, as against an increase of only 8.7 per cent in sales. Their gain in residential customers was 38,032, probably in large measure at the expense of other fuels.

Manufactured gas sales and revenue in the Pacific states both declined in the third quarter of 1949 over 1948, 2.7 per cent for the former and 6.0 per cent for the latter, while the total number of customers fell off 4.1 per cent. The only gain in the entire group of statistics was 3.1 per cent in number of commercial customers.

## NATURAL GAS (CALIFORNIA)

(Compiled by Roy M. Bauer, gas supply supervisor, Southern California Gas Company)

| 1949      | Domestic and Commercial |       | Industrial | *Utilization (in thousands of cubic feet) |                  |                     | Net Receipts from Producers |
|-----------|-------------------------|-------|------------|---|------------------|---------------------|-----------------------------|
|           | — Number of Consumers — |       |            | Domestic and Commercial Sales             | Industrial Sales | Electric Generation |                             |
| July      | 2,597,220               | 5,818 | 11,212,883 | 11,793,076                                | 6,957,902        | 33,856,621          |                             |
| August    | 2,606,078               | 5,837 | 10,366,683 | 12,614,727                                | 9,754,518        | 37,686,932          |                             |
| September | 2,619,736               | 5,920 | 10,704,415 | 13,563,453                                | 8,539,396        | 35,796,261          |                             |

## Steel

Plates, pipe and cold rolled strip continue to be in heavy demand in the West, but in the light structural field demand is off, due to an apparent slump in heavy private construction. Public construction continues very active, but it calls chiefly for reinforcing bars and the total tonnage of steel is far less than for private construction. Price increases which resulted from the acceptance of pensions growing out of the strike settlement last fall seem to have been accepted without great resistance as an inevitable consequence.

## IRON AND STEEL

| Western Area of the United States<br>From American Iron and Steel Institute (in net tons) |                |                     |              |                     |
|---|----------------|---------------------|--------------|---------------------|
|   | Pigiron Output | Percent of Capacity | Steel Output | Percent of Capacity |
| June  | 170,546        | 71.2                | 351,917      | 81.3                |
| July  | 170,475        | 69.1                | 338,861      | 76.0                |
| August  | 178,866        | 72.3                | 372,812      | 83.4                |
| September   | 162,007        | 67.8                | 328,618      | 76.1                |
| October   | 52,535         | 21.2                | 115,527      | 25.8                |
| November  | 141,788        | 59.2                | 238,262      | 47.4                |

Adjustment of coastwise rates by the railroads following the action of the ICC in making the reduced rates from Geneva to the Coast permanent has had no particular effect on conditions except that mills in California which had been absorbing freight to Seattle have been relieved of most of that burden.

Bethlehem Pacific Coast Steel Corporation's new electric furnaces in Los Angeles are being equipped with dynamic precipitators of the hydrostatic type, in order to eliminate any smoke

## ALLOY STEEL

(In thousands of bbls.; from U. S. Bureau of Mines)

|           | Output | Carbon Imps., Hot Topped* |
|-----------|--------|---------------------------|
| May       | 4,423  | 9,690                     |
| June      | 4,990  | 7,051                     |
| July      | 4,452  | 6,828                     |
| August    | 4,177  | 7,182                     |
| September | 4,087  | 5,879                     |
| October   | 2,320  | 5,505                     |
| November  | 5,777  | 3,523                     |

\* Included in total steel.

or fume that would add to the smog problem. "Beth's" plans for a new open hearth plant in Los Angeles are indefinite, and there is a possibility that electric furnaces may be substituted.

## Coal

Intermountain coal production during December was only about half of normal for this season of the year. The sole reason for the low level was the three-day week policy of the United Mine Workers of America.

## BITUMINOUS COAL AND LIGNITE

(In thousands of tons—From Bureau of Mines)

|           | Colo. | N. Mex. | Wyo. | Mont. | Utah | Alaska |
|-----------|-------|---------|------|-------|------|--------|
| 1948      | 1948  | 1948    | 1948 | 1948  | 1948 | 1948   |
| July      | 351   | 195     | 348  | 336   | 508  | 265    |
| August    | 539   | 404     | 483  | 459   | 542  | 527    |
| September | 600   | 271     | 512  | 205   | 547  | 244    |
| October   |       |         |      |       |      |        |
| November  |       |         |      |       |      |        |
| December  |       |         |      |       |      |        |

## Aluminum

Two noteworthy events have taken place in recent weeks in the Coast picture. The danger of power shortage in the Pacific Northwest plants this winter seems to have passed entirely, and Alcoa, Kaiser and Reynolds all have resumed full production in their reduction plants. Earlier they each had to cut off one potline in order to reduce the demand for electric power. Second

event is the purchase by Reynolds of two plants heretofore only leased from the government, the Troutdale (Oregon) reduction works and the extrusion plant at Phoenix, Ariz., so that now all the war-built plants in the West have passed from the government to private industry.

Aluminum has now passed out of the stage where it was being acclaimed as a "miracle metal." It is no longer used as a steel substitute and the demand now being built up seems to

be sound and permanent. The market continues firm, although not quite up to a year ago.

## Copper

Copper production started to move upward during December, with some of the major operators returning to the 48-hour week. Production of other nonferrous metals (except as they are produced in conjunction with copper) was at a price depressed level.

## Aircraft

Military orders still account for better than 80 per cent of the backlog now on aircraft manufacturers' books, and at year's end the industry was looking forward to nearly \$1,000,000,000 worth of new government business, about three-fourths of the planes probably destined to come from Western airplane builders.

Lockheed's Constellations, of which 42 were sold in 1949 to major world airline operators, brought the firm's commercial backlog to \$45,000,000, the highest level since just before the end of the war. Ten "Connies" also were de-

livered during the year to the Air Force for North Atlantic service and two went to the Navy for logistics test purposes. Present orders for Constellations are enough to keep Lockheed occupied at the present rate for a year and a quarter.

North American has been awarded a 300-plane contract for rebuilding T-6 trainers for the Air Force, modernizing them and extending their cruising range. The T-6 is the AT-6, one of the "workhorses" of World War II.

Ryan at San Diego announces a third model of the "Navion," the "Utility 205," to sell at \$9,485 at the factory on a flyaway basis.

Despite a general decline in private and non-scheduled commercial flying, use of private aircraft for business travel increased 51 per cent last year in terms of flying hours, bringing about 5,500 additional planes into service. Meanwhile a small decrease in use, but a 27 per cent increase in number of planes available for hire or charter service, reflected stiff competition and poor business among operators in this field.

U. S. airlines rolled up all-time high profits in 1949, staging a spectacular recovery from the red-ink record of the preceding year. The

(Continued on page 27)

## AIR FREIGHT

(In pounds. Figures from airports.)

|           | Los Angeles* |           | San Francisco |           | Oakland |         | Portland |     | Seattle |         |
|-----------|--------------|-----------|---------------|-----------|---------|---------|----------|-----|---------|---------|
|           | In           | Out       | In            | Out       | In      | Out     | In       | Out | In      | Out     |
| August    | 1,292,300    | 1,260,319 | 1,608,977     | 937,110   | 111,884 | 241,723 | ...      | ... | 437,172 | 889,494 |
| September | 1,435,127    | 1,343,327 | 958,438       | 1,383,804 | 97,912  | 249,726 | ...      | ... | 446,615 | 932,605 |
| October   | 1,466,002    | 1,526,568 | 1,137,901     | 1,269,481 | 116,344 | 171,614 | ...      | ... | 463,149 | 885,980 |
| November  | 1,300,850    | 1,391,597 | ...           | ...       | ...     | ...     | ...      | ... | ...     | ...     |



## Exclusively Western

Located in the West, devoted solely to western needs, Kaiser Steel provides western manufacturers with the quality steel they need . . . when they need it!

Thus western steel users can get rush orders, not in weeks, but often in days, sometimes hours.

Which means that money they formerly tied up in large inventories can be used for expansion or purchase of other needed materials.

Another reason why the West's only integrated independent steel plant is bringing more industry, more jobs, more wealth to the West!

*It's good business to do business with*

# Kaiser Steel

*built to serve the West*

**PROMPT, DEPENDABLE DELIVERY AT COMPETITIVE PRICES** • plates • continuous weld pipe • electric weld pipe • hot rolled strip hot rolled sheet • alloy bars • carbon bars • structural shapes • cold rolled strip • cold rolled sheet • special bar sections • semi-finished steels pig iron • coke oven by-products • For details and specifications, write: **KAISER STEEL CORPORATION, LOS ANGELES, OAKLAND, SEATTLE**

(Continued from page 25)

"Big Four" lines' net income should approximate \$20,000,000, as against \$69,000 in 1948. This miracle was accomplished by drastic cuts in operating expenses and by strenuous efforts to stimulate traffic. "Family plan" schemes, sales of ticket books, installment purchase arrangements, ticket financing, and special rates to groups helped lure more travellers. Air freight business also expanded.

## Lumber

The lumber industry ended the year with a better-than-usual outlook on market conditions. Prices are holding firm and the general outlook is for good business during the early months of 1950.

Prices "hit the skids" in early 1949 and went down fast. Now, although there has been little

or no increase in prices, at least the price structure appears to have been stabilized.

It is the prediction of some in the industry that the second three months of 1950 will be about equal in income to the same period in 1949. Lumbermen appear to have worked off high inventories and have begun to operate on a more reasonable basis, no longer expecting boom conditions to prevail.

Orders in the fir region (West of the Cascades) have climbed to 10,100,000,000 board feet, highest year's total in a quarter century. Western pine orders reached a near-record 7,040,000,000 feet against last year's 7,060,000,000.

There are good inquiries appearing for spring business. It is reported Atlantic Coast cargo

buyers have offered bids for shipment as far ahead as April and May at current prices. But mills aren't grabbing for these distant futures.

Efforts of some mills to clean "cat and dog" items from their yards have brought price offers below the going market, but buyers are reported willing to pay "going market price" for needed items as distress cars become less available.

Disturbing possibilities looming in the generally bright picture include, of course, weather. Production and demand can be cut considerably by adverse weather conditions.

Labor-management relations, too, enter into the crystal ball gazing. The AFL lumber and sawmill workers union has called for employer-financed pensions in the Pacific Northwest. A similar demand may be made by the CIO International Woodworkers of America.

## Plywood

With full order files for about 90 days ahead the plywood mills are all running at good capacity. Some of them could crowd out some more footage but to step up from present rates would bring penalties to profits and efficiency. Buying is somewhat more critical and the better grades are most in demand. Sheeting grade has been sluggish, but when things were booming, prices on this grade were run up so high that users turned to competitive materials.

Cautious retail buying of some months ago led to scurry by jobbers to clean out high-priced inventories as mills cut prices. But then came



leveling off, more confidence, stabilized inventories, and with a slight boost in price by mills a flood of buying began again and it holds

up well. Lots of peeler logs during the fright were liquidated to sawmills and cut up, hence the peeler log supply is not abnormal. All around prospects are good.

## SOFT PLYWOOD

From Bureau of the Census  
PRODUCTION  
(In thousands of square feet)

|           | 1948    | 1949    |
|-----------|---------|---------|
| July      | 123,517 | 96,538  |
| August    | 173,009 | 169,472 |
| September | 178,963 | 168,747 |
| October   | 183,486 | 176,197 |

## PULPWOOD

(Pacific Northwest)  
(Cords of 128 cu. ft., roughwood basis.  
Source: Bureau of Census)

|           | Receipts | Consumption |
|-----------|----------|-------------|
| July      | 273,469  | 189,542     |
| August    | 362,568  | 264,890     |
| September | 257,964  | 255,425     |
| October   | 281,133  | 291,260     |

## Pulp and Paper

All mills, including those in British Columbia, are running at healthy capacity. Paper mills are running at slightly slower pace, adjusting to weeks of five and six days rather than seven. Prices are holding steady and the market is enough on the seller's side to hold them that way. Unbleached pulps are a little weaker, but their tonnage is minor. One large mill, which

has been on unbleached sulphite, is going to install bleaching equipment. Canadians with 10 per cent currency advantage and Swedes with 30 per cent are content to pocket the profit and hold the price. South American market is good and much Swedish pulp is going there. Pulpwood is plentiful and log booms are heavily loaded with pulp type logs.

## Building Materials

The ever-diligent U. S. Census Bureau, which seems to think in terms of a dynamic expanding economy, is running true to form by digging up more useful statistics, and has added additional regional production figures on tile, which are shown for the first time in this issue of WESTERN INDUSTRY.

Drain tile production for the Pacific states for September 1949 was 3,298 short tons; for October, 4,775. Hollow facing tile, in M brick equivalent for the mountain and Pacific states, September 746 and October 800. Floor and wall tile and accessories, including quarry tile, Mountain and Pacific, September 1,258 M square feet, October 1,323.

Clay tile output this year should hold at the 1949 level of 102,000,000 square feet, according to R. E. Jordan, chairman of the Tile Council of America, of which total he estimated California's building program will use more than 20 per cent. Production in 1949 was the indus-

try's second highest, only 2 per cent less than 1948.

He reports that the Housing Act of 1949, which raised maximum building cost of federal housing from 1937's \$1,000-\$1,750 to \$1,750-\$2,500 per room, is inducing local builders to put quality into government housing without fear of exceeding cost limits. Government forecasts of 1950 hospital and institutional building 28 per cent above 1949, and educational building 7 per cent greater, indicate increased installation of clay tile in public construction. Local advertising campaigns backed up by a \$100,000 campaign in shelter, architectural and building magazines and a public relations program are expected to increase tile volume.

## Cement

Cement mills are now in their winter hibernation period, with demand slack because of weather conditions, and inventory being built up against the revival of activity in the spring.

## CEMENT

(In thousands of bbls.; from U. S. Bureau of Mines)

|        | —California— | Oregon - Wash. | Utah - Idaho | Mont. | Colo. - Wyo. |
|--------|--------------|----------------|--------------|-------|--------------|
|        | 1948         | 1949           | 1948         | 1949  | 1948         |
| May    | 2,019        | 2,042          | 559          | 652   | 415          |
| June   | 2,022        | 2,066          | 566          | 638   | 394          |
| July   | 2,077        | 2,011          | 638          | 637   | 487          |
| August | 2,133        | 2,081          | 639          | 594   | 540          |
| Sept.  | 2,116        | 1,982          | 607          | 566   | 511          |
| Oct.   | 2,320        | 1,936          | 639          | 563   | 591          |
| Nov.   | 1,941        | 2,002          | 512          | 420   | 512          |

## STRUCTURAL CLAY PRODUCTS

|           | UNGLAZED BRICK<br>(In thousands of standard bricks) | UNGLAZED STRUCTURAL TILE<br>(short tons) | VITRIFIED SEWER PIPE<br>(short tons) |
|-----------|---|--|--------------------------------------|
|           | Mountain Pacific                                    | Mountain Pacific                         | Mountain Pacific                     |
| May       | 11,997  | 28,864                                   | 2,894                                |
| June      | 13,814  | 28,182                                   | 1,887                                |
| July      | 6,351   | 26,055                                   | 1,994                                |
| August    | 8,515   | 29,762                                   | 2,624                                |
| September | 7,927   | 29,001                                   | 2,082                                |
| October   | 7,351   | 27,518                                   | 1,871                                |

## Canning and Packing

Although unquestionably the sharp price cuts in cling peaches and fruit cocktail put into effect in December by California Packing Corporation increased sales greatly, the monthly statistical reports by the Cannery League of California will not reflect this development for another month, as their last reports are as of December 1. Apricots are in good shape, however, with only 174,169 cases on hand Dec. 1, compared to 3,072,824 a year ago. Pear pack figures have been announced, showing 2,069,614 cases for 1949, the largest pack in history and almost double the 1948 pack of 1,184,170 cases. Northwest pear pack was 3,283,648 cases (1948 was 2,646,231). Movement last fall of California pears was more than double the 1948 period, and Dec. 1, 1949 stocks of 1,090,843 cases were only 250,000 cases above the same date in 1948.

Canned tomato pack figures for 1949 show 3,978,132 cases put up, compared to 4,712,962 in 1948, and total stocks on hand Dec. 1 had been worked down to 3,370,092 cases, about 600,000 cases less than the corresponding date in 1948. Movement in the fall season of 1949 was slightly less, however, so actually the packers have only disposed of their carryover from 1948 plus a small portion of the 1949 pack, and have plenty of work ahead of them to keep stocks down to a safe basis.

(Continued on page 28)

# LUBRICATION

*Tailored to Fit...*



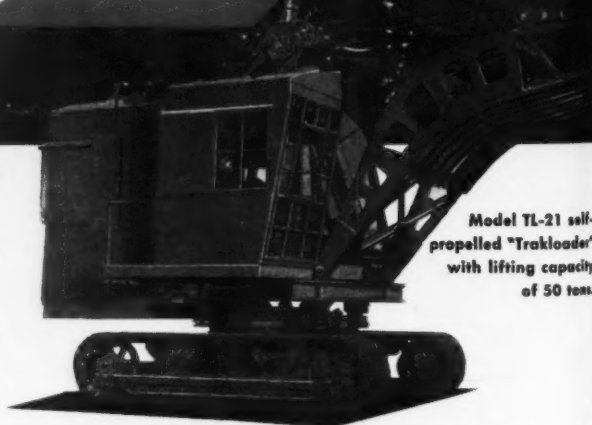
*from beginning..to end*

Cincinnati Hypo-boring mill, milling "Trakloader" turntable. This machine, capable of handling pieces over 12 feet in diameter, is G. P. lubricated with the correct Gargoyle DTE oil.

## *Take Advantage of this G. P. Service*



The G. P. Lube-Engineer is an expert trained to save you money through proper lubrication. The preventive-maintenance program he will put into effect for your equipment will result in longer machinery life, simplified lubrication methods, less buying and stocking problems.



Model TL-21 self-propelled "Trakloader" with lifting capacity of 50 tons.



# THE WESTERN OUTLOOK

5

James Frink (left) vice president of Washington Iron Works discusses lubrication with G. P. lube engineer Joe Falkner.

From cutting oils used in precision machining to break-in oils for its famous Diesel Engines, Washington Iron Works of Seattle, Washington, has relied on General Petroleum lubrication since 1924.

Pioneers in their field, Washington Iron Works was founded in 1882 by J. M. Frink and continues today under the active management of the second and third Frink generations. Its world-wide reputation is built on heavy duty marine and stationary type diesel engines, huge lumber and mining machinery, hoists, derricks, cranes and castings.

Manufacturing processes are varied and complex, calling for a wide variety of specially recommended General Petroleum lubricants. At the same time, every effort has been made to minimize stocking and buying problems by using products that handle a broad range of requirements; for example, Gargoyle Grease Sovarex #1 takes care of most grease needs.

Vice President James Frink comments that "since 1924 the service by General Petroleum lube engineers has been superior and the products they have prescribed have consistently done an outstanding job."



**GENERAL PETROLEUM CORPORATION**

*Serving the West since the  
"Start of the Century"*

(Continued from page 27)

Tomato juice pack jumped up, the volume being 6,341,454 cases, as compared to 5,866,512 cases in 1948. Tomato juice movement in the fall of 1949 was slightly less than in 1948, but Dec. 1 stocks of 5,068,159 cases were less than 50,000 cases above the corresponding date in 1948. Other tomato products, however, were lighter. Catsup pack was only 3,401,189 cases, compared with 4,626,050 in 1948, chili sauce was 477,879 compared with 589,450, and tomato and hot sauce 3,914,174 compared to 3,983,197. December 1 stocks of all three items were below a year ago, tomato catsup particularly so, with 3,234,391 cases on hand, as against 4,220,129.

California asparagus acreage this year will be the highest in seven years, but estimates for

the future indicate a steady decline from 70,518 acres this season to 65,196 in 1954. The all-time high was 76,253 acres in 1940.

Frozen lima bean figures from Western Frozen Food Processors Association show 42,375,141 pounds packed in 1949, the second highest season and about 2,000,000 pounds under 1948. Of this total, the baby lima pack was 7,257,051 pounds, about 1,000,000 pounds over 1948, while Fordhook production declined to 35,118,401 pounds from 38,654,723 pounds in 1948.

Northwest pack figures show a new record in canned beans, with 4,157,184 cases, as against 1,184,170 cases in 1948. The pea pack was 4,763,448 cases, down about 20 per cent from 1948. Canned corn totaled 2,193,674 cases (1948 was 2,434,725 cases).



## Sugar

California & Hawaiian Sugar Refining Company have been running at full blast, both at the big refinery at Crockett, Calif., and in Hawaii, in an effort to get everything that could be shipped safely landed on the mainland before

the end of 1949, but were unable to move all of the sugar in the islands. A full program for all of 1950 is scheduled for the Crockett refinery, and a good 1950 crop is in prospect, but the 1950 quota will not permit C&H to take care of all the carryover plus the new crop in the West. Consequently C&H may have 200,000 tons for sale in the east.

Indications are that beet sugar acreage in 1950 will be greater than in the last two or three years, because the crop value is more attractive to growers under present conditions than some other vegetables. December estimates show that total 1949 crop in the Western states will be 10,168,000 tons, or 746,000 tons above 1948. Acreage was less in 1948 than the previous year, but yields were the highest in history.

## WHEAT FLOUR

(In thousands of sacks. From Bureau of the Census)

|                | Ore.-Wash. | Montana | Utah | Colorado | California | Total |
|----------------|------------|---------|------|----------|------------|-------|
| July.....      | 1,217      | 237     | 329  | 337      | 396        | 2,516 |
| August.....    | 1,362      | 264     | 352  | 401      | 412        | 2,791 |
| September..... | 1,219      | 256     | 311  | 319      | 398        | 2,503 |
| October.....   | 1,191      | 249     | 310  | 373      | 403        | 2,562 |

## CONFECTIONERY AND COMPETITIVE CHOCOLATE PRODUCTS

(From Bureau of Census)

(In thousands of dollars)

| Month          | COLO. - IDAHO - UTAH |                                   |  | — WASH. - OREGON — |                                   |  | — CALIFORNIA — |                                   |  |
|----------------|----------------------|-----------------------------------|--|--------------------|-----------------------------------|--|----------------|-----------------------------------|--|
|                | Sales                | Per Cent Change of Preceding Year |  | Sales              | Per Cent Change of Preceding Year |  | Sales          | Per Cent Change of Preceding Year |  |
| July.....      | 272                  | —13                               |  | 265                | +67                               |  | 1,245          | —15                               |  |
| August.....    | 336                  | —6                                |  | 241                | *                                 |  | 1,849          | —6                                |  |
| September..... | 593                  | *                                 |  | 573                | +9                                |  | 2,009          | —8                                |  |
| October.....   | 683                  | —15                               |  | 577                | +6                                |  | 2,613          | —11                               |  |

\* Change of less than 0.5 per cent.

## ETHYL ALCOHOL

(From Bureau of Internal Revenue)

Production (in proof gallons)

### DOMESTIC UNDENATURED ALCOHOL

| 1949           | California | Colorado | Washington |
|----------------|------------|----------|------------|
| July.....      | 451,006    | .....    | .....      |
| August.....    | 416,574    | .....    | 174,602    |
| September..... | 527,974    | .....    | 214,617    |
| October.....   | 290,758    | .....    | 194,576    |
| November.....  | 437,394    | .....    | 235,697    |

### DENATURED ALCOHOL

| 1949           | California Completely Denatured | —Specially Denatured— | California | Utah   | Washington |
|----------------|---------------------------------|-----------------------|------------|--------|------------|
| July.....      | 4,566                           | 171,858               | .....      | 8,142  | .....      |
| August.....    | 21,669                          | 260,509               | .....      | 16,286 | .....      |
| September..... | 2,418                           | 211,084               | .....      | 16,242 | .....      |
| October.....   | 19,379                          | 231,696               | .....      | .....  | .....      |
| November.....  | 10,202                          | 263,381               | .....      | .....  | .....      |

## Apparel

The last-minute upsurge in holiday buying helped apparel retailers turn in a somewhat better score for the year than was indicated earlier, although the fall quarter's sales record in men's garments was particularly unimpressive.

Some further increases in costs now seem inevitable. Prices of viscose rayon textile yarns

have been raised about 5 per cent by some manufacturers and increases in the price of gray goods are expected. Textile buying has spurted, with heavy advance orders placed for print cloths and carded broadcloths being widely booked through June, at advancing prices on virtually all grades.

Labor costs may not advance at once, but ultimately they will have to bear the burden of some sort of pension plan. The CIO Textile Workers Union in the New England woolen and worsted mills has decided in view of unsettled conditions in the industry, not to reopen its contracts but to let them run for another year without request for higher wages or pensions. A committee was set up, however, to study a plan for future pensions.

The New England mills generally set the pattern for the country, but yet to be heard from are the other CIO unions in rayon and cotton plants, and the AFL textile unions which already have said they would seek \$100 monthly pensions.

TL-21 self-trak loader capacity of 50 tons.

# For STEEL



# in a hurry



# Call RYERSON



**W**herever you are in America, there's a well stocked Ryerson steel plant within quick shipping distance. From thirteen strategically located points, Ryerson carbon, stainless and alloy steels in thousands of kinds, shapes and sizes are ready for immediate delivery.

By carefully specifying and checking, we are able to certify to the consistently uniform high quality of our steels. And to help you select the type best suited to the job at hand, the services of experienced Ryerson specialists are always yours for the asking.

Widely diversified Ryerson stocks enable you to procure many steel requirements at the same time from the same source. One order — one invoice does the job. So save time, save paperwork and be sure of uniform quality. Call Ryerson when you need steel.

#### PRINCIPAL PRODUCTS

**BARS**—Carbon & alloy, hot rolled & cold finished

**SHAFTING**—Cold finished, ground and polished, etc.

**STRUCTURALS**—Channels, angles, beams, etc.

**TUBING**—Seamless & welded mechanical & boiler tubes

**STAINLESS**—Allegheny plates, sheets, bars, tubing, etc.

**PLATES**—Sheared & U. M., Inland 4-Way Floor Plate

**SHEETS**—Hot & cold rolled, many types & coatings

**MACHINERY & TOOLS**—For metal working

Joseph T. Ryerson & Son, Inc. Los Angeles Plant: Box 3817, Terminal Annex; Phone: Angelus 2-6141. San Francisco Plant: Box 188, Emeryville; Phones: OLYmpic 3-2933 — Enterprise 10176. Other Plants: Chicago • Milwaukee • Detroit • St. Louis • Cincinnati • Cleveland • Pittsburgh • Philadelphia • Buffalo • New York • Boston



# RYERSON STEEL

**THE INDUSTRIALIZED WEST**



**WESTERN-MANUFACTURED** industrial products are relying more and more upon Western-manufactured industrial finishes such as those produced by W. P. Fuller & Co. in their new Industrial Products Building at their South San Francisco factory. Here is a workman loading base into 500-gal. stationary agitator tank, as part of process of manufacturing one of the 10,000 different finishes provided for various industries.

## Gillespie Makes Standards to Control Labor Costs Pay Out

**I**NDUSTRY today has not only returned to its pre-war competitive position, but has developed to a point where it is much more difficult to make a reasonable profit than at any time in the past.

This condition is so evident that many of us must take immediate stock of our production costs, lest we find out too late that the cost of doing business is greater than the return it provides.

Production costs fall into at least four natural divisions:

1. Direct labor.
2. Factory overhead.
3. Materials.
4. Selling and administrative expenses.

By **HARRY C. LUCAS**  
Gillespie Furniture Company  
Los Angeles

Although item No. 4 is not strictly a production cost factor, it is nevertheless so closely related that a complete discussion of production costs must include some phases of it.

In the average woodworking plant, direct labor accounts for between 15 and 20 per cent of the sales dollar. Factory overhead costs about the same as labor, and materials take from 38 to 42 per cent of that dollar. Financially, therefore, the most important item is materials, but the most difficult to control is labor.

Comparing these two factors, when materials are purchased you know exactly what you are getting for your money. But when labor is purchased, you are assured only of receiving a certain amount of a man's time. Your profit is dependent entirely upon the use you make of his time.

Six months were spent in setting up standards to control labor cost in our plant. These standards were established some ten years ago, and are still in use today, with only minor changes. Our standards are expressed in time rather than in dollars, and the only changes that have been made are those caused by changes in either equipment or in methods.

Our procedure is to have at hand a sketch of a given item, showing the over-all dimensions. A bill of materials is made out giving the name, the rough dimension, the finish dimension, and the type of material for each part. From this bill of materials, route sheets are made. These sheets show each operation to be performed, both on the parts and in the assembling and finishing of the item.

#### Figuring Costs

Our standards are then applied against these route sheets by operation, and totaling this gives us the man-minutes required by departments. Multiplying these man-minutes by our average hourly direct labor rate in each department gives the labor cost by departments, according to our standards.

Addition of this to our material costs and the proper overhead, plus a percentage of profit, determines the selling price. The sales end of the business must then make a decision as to whether or not this item can be sold in volume under the market conditions that prevail at the time this price is submitted to them.

#### Figuring Selling Prices

Bear in mind that selling prices are set by the market, and not by your costs.

Assuming that the sales department decides this item can be sold profitably, and assuming also that it is decided to manufacture this particular article, a cutting order is given to the factory for the production of a certain quantity.

A copy of this bill of materials, together with a "load identification tag," is sent to the production departments. In addition, each department is notified as to the allowed time per department on this article.

In our particular operation, it is quite easy to obtain daily production records, since we operate with a very closely-coupled set up. There is no stock of completed parts between the veneer plant and the machine room, between the machine room and the assembly room, and between the assembly and finishing room. A daily production record of the cabinet room is used as a basis for the production of that day for all departments.

#### Scheduling Production

Our operation is closely-coupled primarily through a production schedule that is made out periodically. This schedule shows by days what the assembly department will be assembling on each of our production lines on that day. This is determined usually three or four weeks ahead of the assembly date.

This schedule goes to each department of the operation, including the

salesmen, sales manager, purchasing department, order clerk, as well as to the actual production departments.

While only the assembly date shows, there is a standard time that each department uses to adjust this date forward or backward as the case may be. For instance, the veneer department knows that it must complete its work on an item five days prior to the assembly date. The shipping department knows it can depend upon shipment two days after the assembly date.

This schedule so coordinates the flow of production through the plant that frequently on large cuttings we have been shipping an item before the machine work on the entire cuttings is completed. Our production cycle at the present time is down to eight working days. That is, we can ship an item eight working days after work is started on that particular article.

#### Daily Reports

At the end of each working day, a report is made out by the assembly room foreman showing the number of each item assembled that day. Our cost clerk multiplies this production by the allowed time on that item in each department, thereby obtaining the total earned time by departments daily. He also checks the in and out time records of the men and totals the actual hours spent in each department. From these figures he posts a chart which simply has a red and blue line for each of the departments. The blue line represents the earned time, and the red line represents the actual time.

#### Constant Check

This procedure enables us each night before quitting time to know whether or not our departments are making their standards, and if they are not making them, how far they are falling behind. If a department is behind, it is then necessary to find the cause.

I firmly believe that a foreman in charge of a department should have the full responsibility of that department, including the responsibility of controlling his cost. Therefore, each foreman daily examines this control chart so that he can follow the progress of his department.

After the foremen have been trained to understand the vital necessity of not running behind, most discrepancies are taken care of by them without the help of the time study man or other personnel.

#### Schedules Maintained

In the event that a foreman cannot maintain his schedule, it is then the responsibility of the superintendent to see that this condition is corrected. Management will furnish him whatever he

needs in the way of time study, method analysis, replacement of personnel.

It is understood by the foremen in our departments that their tenure of office is dependent not alone upon their ability along technical lines, but primarily upon their ability to produce the quality and quantity of merchandise we desire within the limits of our standard cost.

#### Better Than a Bonus

We pay no bonus of any kind to these department heads, but have made a practice of having their base rates of pay considerably higher than the average wage of similar employees locally.

End result of this practice is to gain the benefits inherent in an incentive wage system (low cost production) without the penalty of constant employee dissatisfaction and without a great deal of expensive paper work.

It will be said that I do not know the actual cost on any particular item. That is true. But I do know that over all we are producing our merchandise at a cost consistent with our selling price, which will yield us a profit.

#### Accurate Job Costs

My years of experience in this type of work have shown me that our standard cost, adjusted upward or downward according to the percentage over or under our standards in each department, is a very accurate job cost. It is much more accurate than any obtained through a multitude of time cards made out in the plant by people without a great deal of knowledge or interest in what they are doing, extended and totaled in the office by clerks to whom the data presented are simply a meaningless mass of figures. Errors that inevitably creep into these calculations throw the most accurate job cost system further off on any particular item than our standard method of procedure.

I strongly recommend that every plant have an analysis made of its machinery and equipment and methods, to a point where accurate and practical standards can be developed for each operation.

#### Get the Best Ability

Let me warn you that this is no task that can be completed in a week or two, nor is it a task which you can assign to some particular individual in your organization whom you feel you should retain, yet do not quite know what to do with. Rather, it is a job for the best brains you have in your organization.

If you do not find within your organization the personnel suitable, then it is a job for the best talent you are able to secure elsewhere. This is of paramount importance, since these standards



will form the basis of your entire production set-up.

Indirect labor costs are an even harder element to control than direct labor costs. The only method I have found to be at all satisfactory is simply to analyze what is needed in the way of supervision, sweepers, etc., in each department, and work out a standard for these operations. Such a standard should be expressed as a percentage of direct labor, varying according to the amount of direct labor involved at any particular time in the department.

Factory overhead breaks itself down primarily into two items: that of fixed charges such as insurance, depreciation, etc., and that of indirect labor. There is little to be done on the fixed charges other than for management to ascertain whether or not the volume that can reasonably be expected to sell is such that it will carry those charges and leave profit.

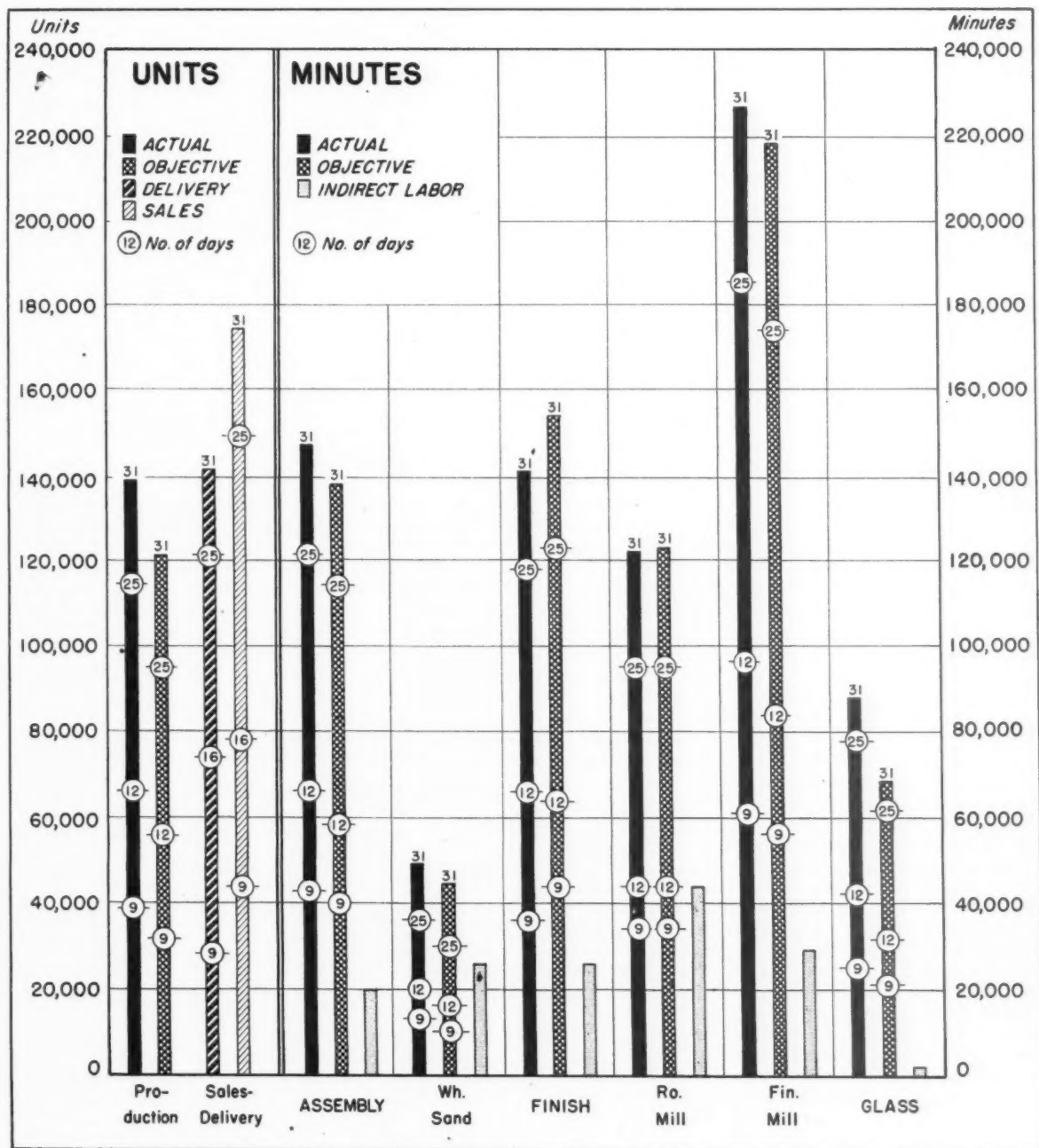
If such an analysis does not give reasonable assurance of this, then it is absolutely necessary that drastic steps be taken. Either increase the volume of

sales or decrease the fixed charges. This may be done by moving into smaller quarters, leasing part of your buildings, obtaining lower rentals in case of a leased plant, or something along those lines.

Materials, since they control the biggest item of cost, deserve a great deal more attention than they receive in most plants.

Purchasing of materials is vital to your business, and the man in charge of purchasing should be as fully familiar

(Continued on next page)



\* Progress chart used by Gillespie Furniture gives clear picture of how actual performance compares with the objectives.

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with production problems as the men in the production departments. Too frequently, the lowest price is not the best buy and will not allow the lowest material cost in the finished product.

### Inventory Control

Control of material inventories is absolutely necessary. In smaller plants this can be done by personal supervision and knowledge on the part of the purchasing agent. In larger plants it will be necessary to keep some form of perpetual inventory.

With such an arrangement, incoming materials can be timed to meet requirements of the production schedule and not embarrass management's working capital because of excessive inventory of raw materials.

Raw materials inventories should be particularly watched at the present time. We are in a period of uncertain prices which have a definite downward trend. A plant can conceivably incur substantial losses on inventory of raw materials in the next few months to a point where its financial stability may be in jeopardy.

We must always remember that we are in business, and our profit is made from the manufacture and sale of merchandise, and not in gambling on inventories.

### Necessary Records

Various types of records are necessary to control the use of materials. These records of necessity vary greatly among plants. However, for each important item of material that is used, one must have reports as quickly and accurately as possible. These reports should show the amount of material actually used as well as the amount that should have been used according to your bill of materials. They should also show the waste factor involved.

When these waste factors are running above normal, the only solution is to conduct extensive research if necessary, and find what is wrong.

Faults may be found in the methods used, in failure to utilize fully all of the scrap, in spraying at too high a pressure (in the finishing room), or in failure of the purchasing agent to buy suitable material for the job.

Methods are about equally as important as the control of labor cost. In no phase has the furniture industry fallen so far behind other lines as in this one. The machinery we use today is essentially the same machinery we were using 25 years ago when I first walked into a woodworking plant. The new machines are more streamlined in appearance, they have ball-bearings instead of babbitt, but fundamentally they do exactly the same thing in exactly the same way.

There has been little effort on the part of either the furniture industry or the manufacturers of woodworking machinery to develop specialized machinery suitable to the furniture manufacturing industry. This has resulted in our industry having a high labor cost and offering poor consumer value as compared with other industries.

We have an outstanding example of this in our plant. Our double-end tenon machine is a standard model occupying a floor space 20 feet square. It has a multitude of motors and saws, representing a heavy capital investment of approximately \$14,000.

### Machines vs. Job Sizes

We have had too much work for it for years. On analyzing the situation, we found that this machine spent 40 per cent of its time trimming to length pieces that run from 14 to 20 inches in length.

The moment this fact became apparent, the absurdity of having a machine of this size operating on such small parts was evident. Rather than spend another \$14,000 for another machine to increase our capacity, we spent approximately \$500 and built ourselves a small double-end trim saw with a chain feed which can cut pieces from 14 to 20 inches in length.

I have cited this particular instance not only because it is outstanding, but because it is representative of what can be done throughout our operations. If you examine your own operations critically and with an open mind, you will find one place or a dozen places where a comparatively small investment will be one of the most profitable things you can do.

A great deal of thought should be given to methods of construction, cutting tolerances, etc. Your assembly costs are high or low depending a good deal

upon the accuracy of your machine work and the amount of thought given to the type of construction at the time the article is designed.

### Accuracy Is Costly

One fundamental to bear in mind is: never try to make a piece fit accurately if it is not necessary. For instance, if you are using a side guide for drawers and if the between-shoulder measurement of your case is 15 inches, do not attempt to cut your drawer guide with a measure of 15 inches. Reduce that measurement to 14 $\frac{7}{8}$  inches, intentionally making it sloppy, and you will decrease your grief greatly.

Never have a place in your construction where it is necessary for three parts to fit. It is possible to machine lock and machine it accurately so that two parts fit each other, but when you introduce a third part you are asking for trouble. It is always possible to change the design so that you eliminate this problem without changing the outward appearance or strength of the article.

I also find that it is possible within a given plant to standardize on parts to a great extent. It is not necessary to standardize 100%. A plant can very rarely achieve that. But if you exert an effort to standardize as much as possible, you will be amazed to find how much it will simplify your purchasing problems and increase the accuracy of your mill work.

### Cost Control Only a Tool

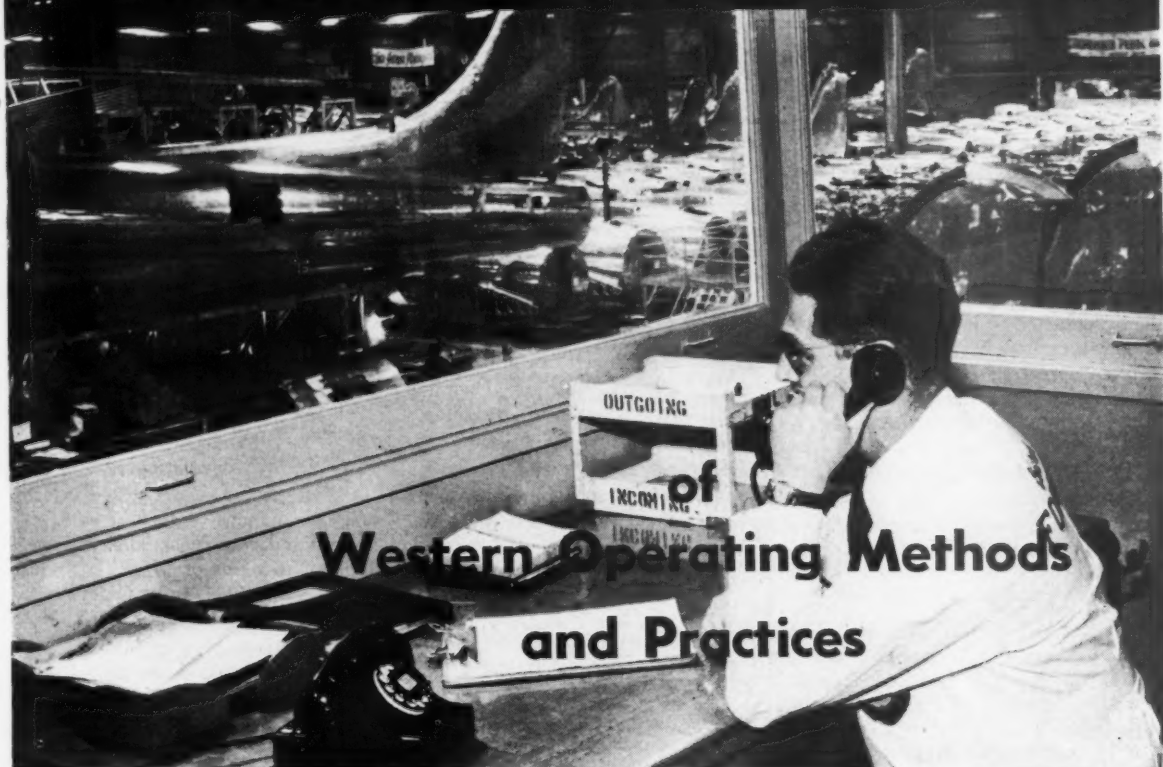
Low production cost, good cost control is only a tool of management. It is not management in itself. A poor production plant with good management and good merchandising can survive and have profitable operation. But the best production plant in the world, if it has poor merchandising and bad administration, will fail in spite of any cost system.

• Coordinated production keeps even flow of work moving through Gillespie plant. Purchasing knows when and how much material needed; Sales can count on deliveries.

### PRODUCTION SCHEDULE

| Walnut  |     | Case Line |              | Bed Line |          | Chair Line |        |
|---------|-----|-----------|--------------|----------|----------|------------|--------|
| 3301-1  | 450 | 8/31      | 3302 400 Wal | 2800     | 34 HB    | 3012       | 200 BL |
| 3301    | 100 |           |              | 2801     | 43 FB BL |            |        |
| 3302    | 500 |           |              | 3000     | 75 FB TT |            |        |
| 3306    | 450 |           |              | 3030     | 100 BL   |            |        |
| 3307    | 400 |           |              | 3030     | 50 TT    |            |        |
| 3308    | 200 | 9/1       | 3302 100 Wal | 3030     | 25 TT    | 3012       | 100 BL |
| 3309    | 300 |           | 3312 200 Wal | 2830     | 75 BL    | 3012       | 100 TT |
| 3310    | 170 |           | 3308 50 Wal  | 2830     | 50 TT    |            |        |
| 3311    | 100 |           |              | 2831     | 25 TT    |            |        |
| 3312    | 200 |           |              | 2831     | 25 BL    |            |        |
| 3318    | 200 |           |              |          |          |            |        |
| Prima V |     |           |              |          |          |            |        |
| 2700-3  | 145 | 9/2       | 3308 150 Wal | 3031     | 25 BL    | 3012       | 100 TT |
| 2702    | 100 |           | 3309 200 Wal | 3031     | 25 TT    | 3017       | 125 TT |
| 2706    | 90  |           |              | 2807     | 200 BL   |            |        |
| 2707    | 220 |           |              | 2807     | 150 TT   |            |        |
| 2709    | 100 |           |              | 3007     | 50 TT    |            |        |
| 2714    | 100 | 9/6       | 3318 200 Wal | 3007     | 75 TT    | 3017       | 275 BL |
| 2730    | 125 |           | 2702 100 PV  | 3007     | 125 BL   |            |        |

# WESTERN INDUSTRY MAKES A SURVEY



## Western Operating Methods and Practices

• Kenneth Sweeney, general foreman of crane operations, directs from his balcony office the moving of a tall fuselage section in the Boeing Aircraft Company plant. Sweeney is talking to the crane operator through a new communication system installation.

**A** PICTURE of where industry in the West stands in regard to its management and operating methods ought to be of considerable interest. In fact, it might easily indicate just how far our industrial education out here has progressed, and how Western ideas of management compare with those of the older manufacturing areas of the country.

For the last six months the editorial staff of **WESTERN INDUSTRY** has been endeavoring to develop sufficient information along that line to present to its readers, and we now have on hand upwards of 200 questionnaires from industrial plants of various types.

This effort has been a cooperative venture with management consultants in some of the leading Western cities and with seven Western universities, from whom **WESTERN INDUSTRY** has had valuable help. These consultants and university men helped us prepare the questionnaire, and the consultants

and university students between them carried on the interviewing.

A study of the information received will be presented in the March issue of **WESTERN INDUSTRY**. Apologies to our readers are in order for having led them to believe this would appear in our January issue, which is the annual Review and Forecast Number. Unfortunately for our promises, the survey went over better than we expected, and it became impossible to make either the January or February issues. Having thus twice convicted ourselves of being liars, we obviously can't wait any longer, and

### "HOOPER RATING" FOR WESTERN INDUSTRY

The entire 5:30 p.m. broadcast of Chet Huntley, CBS news commentator, on Jan. 17 was devoted to a review of Western economic conditions as presented in the Annual Review and Forecast Number (January issue) of *Western Industry*. Mr. Huntley's Hooper rating is the highest of any daytime newscast in the West.

our readers may be certain of the story appearing in the March number.

Summarized briefly, the survey covers the following ground:

1. Type of operation.
2. Size of company, in number of employees.
3. Whether methods and systems are formulated by eastern management or parent company, or independently developed in the West.
4. Organizational set-up.
  - a. Division of functions.
  - b. Communications.
5. Operating methods and procedure.
  - a. Methods, standards and production engineering programs.
6. Labor efficiency.
  - a. Labor cost controls.
  - b. Time studies.
  - c. Wage incentives.
7. Quality control.
8. Other cost controls.
9. Inventory controls.
10. Budget controls.



# Pneumatic Equipment Can Lighten Your Heavy Production Problems

**A**NY manufacturing process that requires a human hand to touch or move the work, assures a high finished product cost.

Today, particular effort is being made to reduce manufacturing costs. Every industrial function must be eliminated that requires a person to move, lift, carry, shift, or otherwise handle raw materials, work-in-process, or the finished product.

Plant operators who are aware of the possibilities of using air-operated equipment are making rapid, and often ingenious strides toward increasing their plant production by its use. They know that anything now being done by hand or foot power can be done probably faster, easier, and certainly cheaper by proper application of compressed air power.

This article deals with some of the factors to be considered in air cylinder applications, as well as a brief discussion of some installations of such equipment.

## Fundamentals

Fundamentally, the mechanics of compressed air power is as simple as the formula on which it is based. That formula is: Force equals Pressure times Area. Force is expressed in pounds; Pressure is expressed in pounds per square inch; Area is expressed in square inches.

For example: if the operating pressure of a compressed air system is 90 p.s.i. and the area of the piston head against which this pressure is exerted is 10 square inches, then the force generated against the piston head would be 900 pounds. The working force of this arrangement, then, would be 900 pounds, minus whatever force is used to overcome the friction of the piston packing.

One of the most common difficulties encountered in the application of air cylinders is lack of sufficient power to do the work intended. A few moments spent calculating the amount of (usable) force developed, and determining the load that it is required to overcome, will save considerable time and worry.

It is generally well to over-power a cylinder installation. One reason for this is that it is almost impossible to calculate exactly the amount of force you will require for any given job. Another reason is that your job requirement may fluctuate, and you should provide

By **HERB VICKERY**  
General Manager, The Rucker Company  
Emeryville, California

enough power in the original instance to compensate for that.

By installing cylinders of known strength (cylinders are rated for their maximum pressures) that are husky enough to do your job, a satisfactory operation is assured.

If a given installation develops too much force at standard line pressure, a reducing valve may be incorporated.

This valve is placed in the air line to intercept it just ahead of the valve that operates the cylinder. By using a reducing valve, you can cut down the pounds-per-square-inch pressure to whatever level may be desired for a particular application.

In such case, the basic formula must again be worked out to suit your use.

This is the first in a series of three articles. The second is to be "The Application of Hydraulic Cylinders to Industry," and the third is to be "The Use of Fluid Power Transmission Systems in Industry."

Since 1944, the author of this series has been general manager of the Rucker Company, engineering specialists in the design, manufacture, and application of pneumatic and hydraulic systems in all types of industry.



**HERB VICKERY**

For instance: if it is determined that 700 pounds of force is required for your application, and the air pressure is 90 p.s.i., and you are still using the piston with 10 square inches of head surface area—then the reducing valve might be set to slightly better than 70 p.s.i. That working pressure would provide the necessary force to do your job, plus enough more to overcome friction drag.

Operators should calculate their actual requirements for air pressure and volume before they purchase compressors. By so doing, they will be sure of getting enough power to do the jobs they want done. Too much power is all right, because it can be reduced to suit your particular applications. But a system that provides insufficient power is useless. It will operate nothing.

## Calculations

Most compressors are rated in cubic feet per minute (expressed as c.f.m.) of piston displacement. Their volume is figured in terms of "free air," which is roughly defined as air under normal atmospheric conditions.

Compressors vary in efficiency from approximately 60% to 80%. As a rough average, 70% may be used as a basis for calculation. Hence, a compressor rated at 1,000 c.f.m. will actually deliver approximately 700 c.f.m.

If this air is then compressed seven times, there will be 100 c.f.m. of compressed air power (pressure) available to do your job.

The number of times air is compressed is called the compression ratio.

To determine this ratio, add the absolute pressure of free air (14.7 p.s.i.) to your desired gage pressure (in p.s.i.) and divide that total by 14.7 p.s.i.

For example, if you wish to compress air to a gage pressure of 88.2 p.s.i., you can determine the compression ratio by adding the 14.7 to 88.2 and dividing that total (102.9 p.s.i.) by 14.7. The answer is seven, which indicates that the air has been compressed seven times.

In short, a 1,000 c.f.m. compressor operating at 70% efficiency will deliver 700 c.f.m. of free air which, if it is compressed to 88.2 p.s.i. will give 100 c.f.m. of compressed air at that working pressure.

By calculating the volume of air required to operate your air cylinder, and knowing the number of times per minute that the cylinder is to operate, you



can readily figure the size compressor you will need to do that work.

### Foreign Matter

One of the problems of compressed air systems is the presence of water, dirt, and scale in the lines and valves. Installation of proper air filters in the lines at strategic points will eliminate those undesirables. It will also increase the life and reduce the maintenance on your entire system.

To be most effective, these filters should be installed as close as possible to the valves and cylinders they protect.

As the air is compressed, heat is generated. Any moisture present in that air then becomes vapor. Therefore, it is useless to install a filter immediately adjacent to the output side of your compressor, because any moisture in the air will go right through it. A filter on the intake side is recommended, however, as a precautionary measure for your entire system.

### Lubrication

Valves and cylinders are actually working machines. They require proper lubrication. If your system is not filtered, or if it is improperly filtered, the air might contain moisture that will wash away lubrication and allow excessive wear of moving parts.

You might intercept the supply lines with oilers, on the output side of the filters. These oilers will keep the system's moving parts well lubricated. They will add considerably to the life of your equipment, and prevent possible costly breakdowns.

### Great Choice of Valves

There is a tremendous need for different types of motivation. This has led to the development of many types of valves, each one designed to do a particular job.



• This simple but important job of closing terminal fittings over wire ends is done by air cylinder in half time formerly required by a manually-operated vise.

Valves generally are used for regulating pressure, for controlling the speed of the flow of air, or for controlling the direction of the flow.

Valves used for controlling the directions of pistons are usually either the rotary plate type or the spool type. Some poppet type valves are used. Any of these valves may be either hand, foot, pilot operated by the use of small pilot valves, or electrically operated by the use of solenoid coils. The type of valve you use in any circuit will depend upon the operation you want performed. It is possible to work out many automatic and semi-automatic operations with the large variety of valves available.

Most important for you to remember in the installation of valves is to keep them free from all abrasives. Avoid mounting them in such a way that the body of the valve is under stress or strain. Improper mounting frequently causes mis-operation of the valve.

### Cylinder Choice Important

Most cylinders used today are double acting (they are powered in both directions). Mountings may be either foot, flange, trunion, or toggle, or a combination of different types. Many types of standard cylinders of good construction are available on the market today to fit almost any application you may have.

When mounting cylinders, it is important to see that they are properly aligned and securely mounted. The cylinder must be firmly fixed so that it cannot shift on its mountings when in operation. The impact blow is sufficient in many cases to snap off the cylinder.

Care should be taken to see that the piston rod does not take any side load, as this causes undue wearing of the packing gland. If such loading is unavoidable, due to the nature of the job, special provision for supporting the rod should be made.

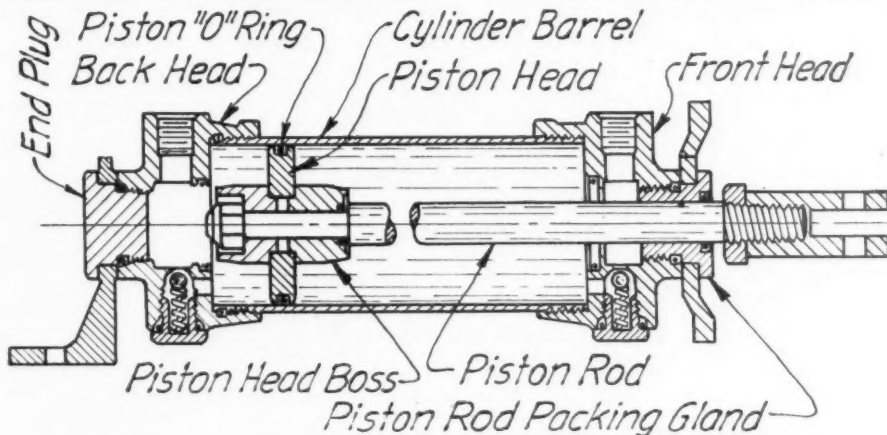
Use of internal cushions on the cylinder heads prevents or diminishes impact of the piston against the cylinder heads. It smooths out the operation of the cylinders and adds to their life.

Many single acting lift cylinders (powered in one direction only) work on a combination air and oil system. These cylinders are normally used for lifts and stacking operations. In a system of this type, air is the motive power; oil is used as the pressure medium in the cylinder. Such a system when properly valved overcomes the compressi-

(Continued on next page)

• This schematic cross-sectional view of a typical pneumatic cylinder shows what makes it "tick." Connections to the operating valves are screwed into the front and back heads. When

calculating square-inch piston area on a double-acting cylinder (such as the one illustrated) be sure to subtract square-inch area of the piston rod cross-section, for accurate answer.



bility of air by substituting oil inside the cylinder, yet maintains the flexibility of the use of air as a motive power. These cylinders normally return by gravity. They are usually used where speed is not an essential.

Naturally, the applications given here cover only a fraction of the multitude of air cylinder installations. As profit margins shrink at a time of increasing, or at best, constant labor costs, industry is turning increasingly to labor saving devices. Use of air cylinders and air-powered installations bulk large in its eyes.

A great majority of plant owners are going beyond just the installation of air-powered equipment. They are calling on outside firms to completely check their operations, to suggest . . . and later engineer their air cylinder applications. Thus, they assure that their plants' air cylinder applications are built to do the best job today, and that these installations are carefully planned so they will "grow" with the factory itself. In the next installment we will further discuss industrial applications of cylinders. At that time we will discuss hydraulic cylinder applications.

### **Compressed Air Blows Away Manufacturing Production Costs**

Compressed air is an "industrial muscle" often overlooked by production men. Some plants, though, like Essex Wire Corp., in San Diego, use it to excellent advantage.

For instance, they use several compressed air cylinder hookups for closing fittings over wire ends. Action of an air cylinder upon a set of jaws completes this operation in half the time formerly required when foot pedal pressure was used. And the machine never gets tired.

Another important application is in the regulation of a vulcanizing machine. In this operation, highly exact control of both pressure and timing is necessary for good results. By using air-actuated instruments for this control, the desirable precision is obtained at considerable less original cost and subsequent maintenance cost than if more elaborate mechanical controls had been used.

A problem in connection with applying lacquer to wire was easily solved by the application of compressed air. The method used is to direct the lac-

quer to coils of wire on the floor by a system of pipes connected with an elevated lacquer barrel.

But the lacquer is too thick to flow by gravity alone. So the 100 pounds per square inch air pressure from the factory lines was reduced to ten pounds by a regulator, and applied to the barrel. That moves the lacquer exactly as desired.

Compressed air from the plant lines is also reduced for use in connection with lead pots and other gas furnaces to obtain better combustion.

High-speed performance of an automatic wire cutter is possible because of another simple application of compressed air. As each cut is completed, the return stroke of the cutter actuates a cam that releases an air jet at the point of the cut. Thus, cuttings are blown away automatically and continuously, so the machine need not be stopped to prevent fouling of the cutter.

This equipment was designed by company engineers; any alert manufacturer can select particular applications which will improve his particular production methods.

•Here is one of the first steps in making the door handles for your 1950 car, or a part on that fancy new washing machine. Copper and aluminum are alloyed and poured into multi-segment molds. Then that material is further alloyed with zinc

and other metals to become Kirksite No. 2, a zinc base die casting alloy in widespread use to manufacture low-cost mass-produced intricately designed parts. Nearly half the aluminum pigs and practically all copper in the U. S. comes from West.



# Electronic Metal Testing Shows Up Defects, Assures Safety

By ARTHUR S. PEDRICK

Assistant Engineer of Tests  
Southern Pacific Company

**S**AFETY is of paramount importance in railroading. How to assure its safety at all times is the province of the railroad's Test and Inspection Department. Quality of inspection is directly dependent upon (1) equipment employed to detect irregularities, (2) judgment of the men who use this equipment.

Southern Pacific Company, vitally interested in this phase of its operation, uses the gamma ray and ultrasonic methods in the search for internal defects, and the magnetic particle and fluorescent penetrant method to detect surface flaws.

In gamma ray radiography, Southern Pacific uses a 200 mg capsule of radium salts, mainly in connection with foundry work and in checking purchased castings for internal flaws.

Short wavelengths of gamma rays which emit from radium penetrate casting materials and darken a photographic film which is placed on the side

of the object opposite the radium. This results in a shadowgraph similar to an X-ray picture.

Use of radium in this manner forms a very simple means of testing for internal flaws, with a minimum of equipment. Exposure time is dependent upon amount of radium used, thickness and density of material, distance between radium and film, and film speed. Although this much sought after material is expensive considering first cost, only very small quantities are needed for inspection work.

Radium is characterized as an ideal "power plant" since it goes on working night and day providing a continuous source of gamma rays. The intensity of these radiations does gradually decrease but is not any great concern to us since it is claimed that the form of radium as used for such industrial purposes requires 1690 years for its intensity to drop to half the original value.

To get the most good from inspection by improved methods, there must be full consideration for mechanical design, method of fabrication, and shop practices used in manufacture and maintenance of parts tested. If these factors are not accounted for, any stamp of approval or symbol of inspection carried by the tested part can result in a false sense of security.

Use of gamma-ray radiography was recently applied to non-destructive testing of car coupler knuckles. Inspection of a failed knuckle by our laboratory personnel showed a weakened condition due to internal flaws and cavities. Radiographs were made of several new knuckles taken from stock and similar defects were found. By this means we were able to sort out these defective parts and call to the attention of the manufacturer for improvement of foundry operations.

## Electronic Applications

The application of modern electronic equipment to the inspection field provides the ultrasonic methods which are used on Southern Pacific for locating internal flaws in mounted parts such as locomotive driving axles and crank-pins.

The principle of operation consists of transmitting ultrasonic vibrations into the part and then receiving the pulses which are reflected back from the end of the piece from the flaws.

These ultrasonic vibrational waves have a frequency well beyond the usual range of hearing, that is, 20,000 cycles per second. Equipment we are using is designed for a range of one-half to five megacycles. With these high frequencies, the waves have highly directional properties.

Waves are not appreciably refracted around small obstacles, but are heavily reflected from any change in density or elasticity in their path. The change from electrical energy to mechanical vibrations takes place through a suitable crystal transducer, which is held in contact with the test piece.

Transmitted and reflected pulses may be viewed on the screen of a cathode

• Zygo inspection of parts shows up surface defects by fluorescent penetrant.







ARTHUR S. PEDRICK

ray tube. Electronic equipment provides the necessary voltage supply, sweep circuits, marker wave, signal amplification, etc.

In transmitting the beam of ultrasonic energy through the part there is generally some divergence, which is inversely proportional to the size of the generating crystal and the wave length. The defect to be detected must present a reflecting surface of greater dimension than the wave length of sound.

For effective transmission of sound, it is necessary to have a reasonably smooth surface and use a fluid medium such as lubricating oil to fill the gap between the generating crystal and the medium under test. Any air gap makes transmission impossible.

When testing steel using a frequency of two and one-quarter megacycles, the wave length will be 0.124 inches. For the smaller defects it will be necessary to use a higher frequency. This in turn limits the penetration of sonic energy into the test piece, since longer wavelengths generated at lower frequencies are capable of deeper penetration.

#### Other Methods

Besides using reflected waves, there are other methods of ultrasonic testing which operate on principles of resonance and absorption.

Resonance method is used mainly for measuring thickness of thin plates where only one surface is available for testing.

Absorption method is useful for checking laminations in plates. It uses the degree of absorption of multiple

reflected signals as a means of indicating the presence of laminations.

#### Care Must Be Used

Careful inspection for surface defects is of utmost importance to insure safe operation of railroad equipment. In this connection, other improved methods are required such as the magnetic particle, commonly referred to as magnaflux and magnaglo, and the fluorescent penetrant (zyglo) methods.

Magnaflux and magnaglo tests function on the principle of magnetic particle build up at the flaws, due to magnetic leakage fields. An intense magnetic field is caused to flow through the part to be tested. Where the path of this field is interrupted by the cracks of flaws in the metal, a leakage field results. This field attracts metal particles as they are applied either in the form of dry powder or when flowed on with a fluid.

For best results, it is important that the direction of magnetic flux through the object under test is such that it approaches the flaw at an angle as close to 90 degrees as possible. This causes a maximum disturbance of magnetic field at the flaw, and the greatest build up of particles.

#### Longitudinal Magnetic Field

Southern Pacific uses three general types of magnetized fields. First is a longitudinal magnetic field that is included in the test part by means of a coil or winding around the part. This coil may consist of only a few turns of heavy cable passing a high current, or it may be a formed coil with greater turns, proportionately less current, and wire size to suit.

The usual test for locomotive side rods, valve motion work, crank pins, is to wrap the part with three turns of

flexible cable and energize with 500 amperes AC at about six volts. Magnaflux powder is sprinkled on as the coil is moved along the part. This type test indicates the fatigue cracks or transverse flaws.

#### Circular Magnetic Field

A second type magnetic field with circular direction is produced by passing current through the part to be inspected or through a central conductor. This type test is used for finding the longitudinal flaws in parts such as track mauls, chisels, diesel crankshafts, crank pins, axles, etc. This is a very sensitive method of inspection since the magnetized field is within the part itself, has a definite circular direction, and an absence of stray fields.

#### Special Type Magnetic Field

The third type of magnetic field is introduced into the test part by means of the poles of an electro magnet with laminated iron core shaped to form a yoke.

This test device is designed for operation direct from 110 volt AC lines. It has proved satisfactory for test of diesel traction motor gears, and a few other special parts not readily adaptable for use of the first two types of magnetic fields.

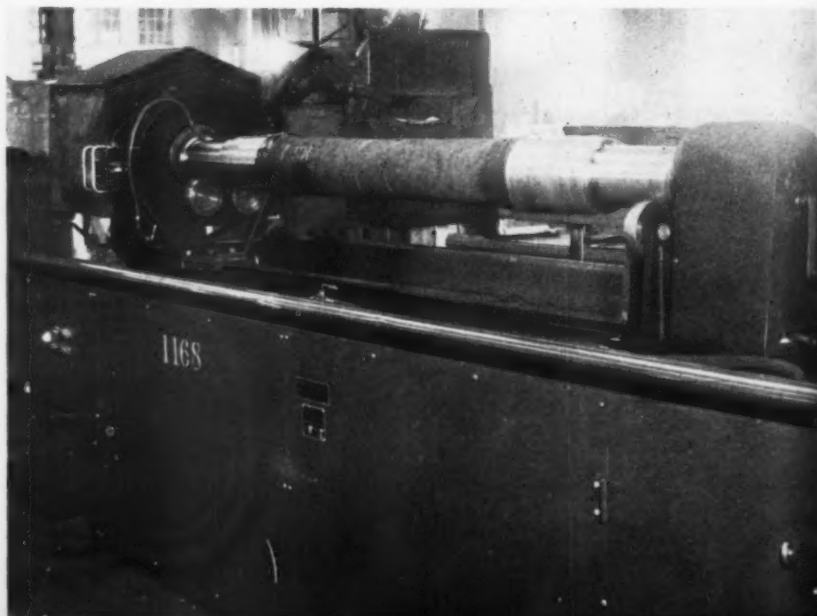
Magnetizing current for producing the above fields may be either AC, DC, or pulsating DC. We use DC and circular fields for inspection of track tools and chisels, but all other parts are inspected with AC.

Southern Pacific has several magnaglo installations to test axles and diesel engine parts. Magnaglo methods combine advantages of wet method magnetic inspection along with fluorescence under black light.

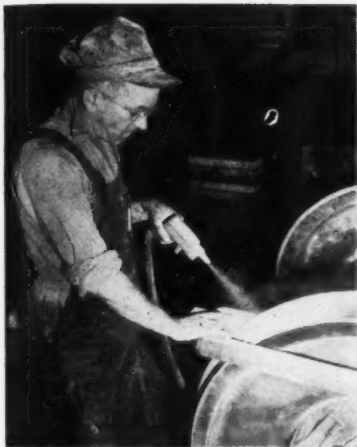
Inspection procedure consists of producing a magnetic field through the

(Continued on next page)

• Magnaglo inspection of parts shows up surface defects by magnetic particles.







• Illustrating magnetic particle inspection of wrought steel railroad wheels.

part, application of the inspection fluid, and checking for the build up of particles which fluoresce when illuminated by "black light."

The "black light" is formed by invisible radiant energy in the portion of the ultra violet spectrum beyond the blue of visible light.

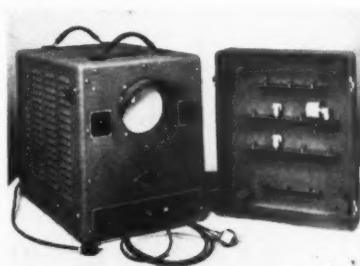
Fluorescent magnetic particles are attracted by the leakage fields around defects the same as when dry powder methods are used.

Zygly fills the requirements for testing of the non-ferrous materials which cannot be examined by means of the magnetic particle methods. This is strictly a fluorescent penetrant method for non-destructive detection of surface flaws. Principles of operation consist of first coating the part with a fluorescent fluid which penetrates into the surface defects. Excess penetrant is then washed off with a spray of water. Next the parts are dipped into a developer solution which acts to draw the penetrant back out of the flaws. Parts

are then placed in a drier a sufficient time to remove all moisture. They are then ready for inspection and are checked for fluorescent flaw indications under near ultra-violet or black light.

These methods are being used on Southern Pacific mainly for inspection of Diesel valves and roller retainers from the axle bearings. The valves are made of special heat resistant alloy, high in chromium and nickel with result that the material is relatively non-magnetic and will not take a satisfactory magnetic test.

Non-destructive testing of railroad parts by these methods is of great value in preventing costly failures of locomotives and car equipment. Test of a representative number of new parts as well as used ones gives a check on purchased material. These inspections are also a means of checking on mechanical design. Frequently such a check will call attention to undesirable methods



• Ultrasonic inspection equipment used to locate the internal defects in metal.

of fabrication or shop practices which may contribute to failure of parts by setting up internal stress or a concentration of stress at critical areas which increase in magnitude as the dynamic loads are applied in service.

Any testing device or procedure, however, is only as good as the under-



• Showing magnetic particle inspection of a Diesel traction motor axle gear.

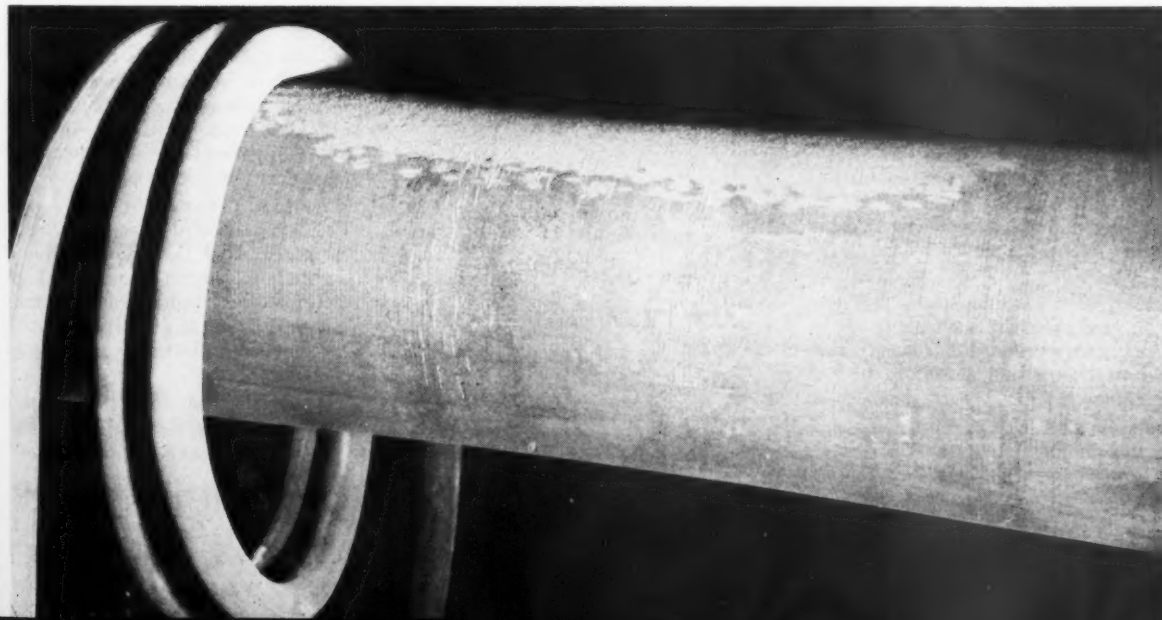
standing and judgment of the people who use it. It is the practice on the railroads for personnel to be assigned to use equipment based upon fitness and seniority of the individual.

This results in a continuing problem of training operators so they will have sufficient understanding of the principles underlying the method used, and proper application of the equipment to make the test effective.

It was found necessary to set up standards for eyesight, and to qualify operators for visual acuity. Operators are required to have distance vision of 20/20, reading vision of Jager 1, and normal color perception.

There still remains the problem of judgment. A thorough understanding must be had of the potentials of cracks in parts, and whether their direction is relevant to lines of major stress. Operators must recognize whether the checks are merely small seams from machining, which are not so oriented as to cause nuclei for failure.

• Magnetic particle inspection of a passenger car axle. Corrosion fatigue cracks show up plainly where particles accumulate.





• Typical setup for three-dimensional picture. Greig, left, adjusting lights; Goldmann, center, determining precise distance

of camera from subject throughout entire swing around arc; Heath, at right, focussing and manipulating camera controls.

## Three Dimensional Pictures That Show Four Sides of Your Product

**W**HEN an advertisement that is composed solely of a photographic negative can be placed on location in a tavern for a period of only six consecutive days and within that period of time zoom the liquor sales to an immediate 160 per cent of normal, that's real news to anybody's business. The picture showed only a bottle of liquor, a highball in a glass, and a vase of flowers.

When you can see that picture with your own eyes — and actually look around the bottle, or the vase or the highball glass, you yourself begin to wonder about the mystery of this new art.

When the same type of ad but with a different scene can stimulate the sales of a bank's travelers' checks to a point where the bankers themselves reach a point of amazement (and you know how hard bankers are to convince) — then it can be clearly stated that the advertising business has received a healthy, highly interesting and powerful trans-fusion.

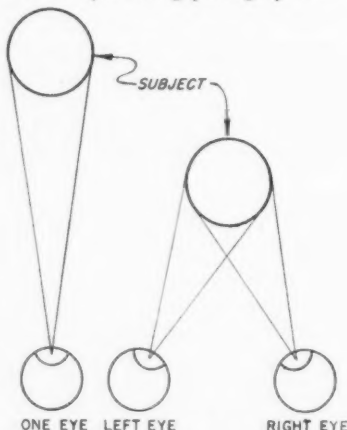
And when you find out that this new sales supercharger is available to you at a cost competitive with current commercial displays . . . but hark to the tale of Photorelief.

Extreme depth of perception afforded by this photographic process is present

because of the camera's design as well as methods employed during exposure.

All this wonder is produced by a massive camera that weighs nearly a half-ton. It is a piece of highly technical equipment. Everything about it is automatic, once set up for a particular exposure. It is electrically operated, and controlled by one switch.

This camera uses only one lens for the exposure, although eight lenses are standard equipment for it. Lens choice (focal length) depends upon the size of the subject being photographed.



• Each eye sees subject separately. Images so recorded are conveyed to brain where they unite and are fused into one.

During exposure the camera body itself moves through an arc of 16 degrees 30 minutes around the subject being photographed. This movement takes two and one-half seconds, during which time the shutter remains open. As images pass through the lens, they are registered on the negative through a prismatic screen already in place in the film holder between negative and lens.

One of the most important phases of this operation is the ingenious arrangement for controlling negative plane in relation to lens plane and distance from it.

As the camera sweeps around its prescribed arc, its filmholder remains parallel to the subject automatically; negative plane does not change, but remains constant and in perfect synchronization. Thus, the camera is always in correct focus on the subject.

Light control through the lens is provided by a vertical slot, mathematically determined, rather than the usual round aperture found on most cameras. A high degree of clarity and definition results from the use of a (relatively) small light-admitting orifice plus strong subject illumination.

Negatives, when developed, appear to be quite fuzzy and out of focus. But when a prismatic screen, a duplicate of

Three-dimensional photography has been a goal of photographic scientists for many years. Various methods have been offered. Some are on the current market, proposing to achieve that goal. Many attempts at it, such as Grandma's stereoscope, have been tried and dropped. They came close to the goal, but have not quite conquered the problem. Photorelief apparently accomplishes the impossible.

A French scientist and inventor, Maurice Bonnet, became interested in this photographic challenge back in the 1930's, in Paris. By 1935 he had invented a camera that came close to satisfying his quest. By 1937 he had formed a company in Paris to market it and license its use to photographic studios for portrait work. His process is called "Photo-en-Relief."

Today that same camera, with improvements incorporated through the intervening years, is in use for portrait work on both sides of this globe. Studios have them in Argentina, Belgium, Canada, Egypt, England, France, India, Saudi Arabia, Sweden, Switzerland, and now in the United States.

Bonnet is presently working in Paris inventing refinements for use in television, motion pictures, and X-Ray.

During the summer of 1945 Len Goldmann, an American formerly in the advertising business (then a major in the U. S. Army), saw a sample of Photo-en-Relief in Paris. He immediately recognized commercial possibilities, and started to make contacts with an eye to obtaining rights for the process in the United States.

Kurt Heath, an experienced photographer from Brussels, saw a sample of this work in 1947, in his home city. He, too, wanted to obtain United States rights.

Early in 1948, Heath formed a corporation in Denver, Colorado, named "Heathographie, Inc." This firm was incorporated on the basis of United States rights in seven of the Western states, plus an option on the entire country.

About that time he met Goldmann. They joined forces, obtained full United States rights, and moved to San Francisco with the process which they call "Photorelief."

At present this corporation is composed of:

W. T. Wells, chairman of the board for Lane Wells Company, who is also chairman of the board for Heathographie;

Kurt Heath, president;

Dr. Gustav Fassin, vice president in charge of technical affairs. Dr. Fassin, a master of the science of optics and inventor of the Argus camera, is also retained by the U. S. Navy in an advisory capacity at Moffet Field, as an authority on optics in observation of supersonic flight;

Len Goldmann, vice president and sales manager. He was formerly with McCann-Erickson, Inc. in San Francisco, and is a former partner in Photo Print, a San Francisco firm;

John Greig, former office manager for Gabriel Moulin Studios, San Francisco, treasurer.

Wells and Greig joined the firm during 1949, after the corporation moved to San Francisco, where they set up testing facilities at Gabriel Moulin Studios. Development work was carried on there until last November, when the firm moved into permanent quarters at 657 Mission Street, San Francisco.

the one superimposed upon the negative in the camera during exposure, is superimposed upon the developed film in the same physical relation, then the three-dimensional effect is observed. An uncanny but genuine depth of perception is developed.

At first, the prismatic screens used were made of glass. Original dies were recently brought here from France (where this camera and process were invented) and screens are now being manufactured of plastic by Remler Radio Corporation. Plastic is a superior

material, since it is less breakable and considerably less expensive.

All photographic processes (except actual exposure in the camera as just described) are in current commercial use. Loading and developing the film are no different from ordinary amateur or studio practices. As many duplicate negatives as desired can be processed from the original, also by current commercial methods.

In commercial production, negatives are sandwiched between a sheet of clear plastic on the back and the prismatic

screen on the front. Then they are hermetically sealed forever.

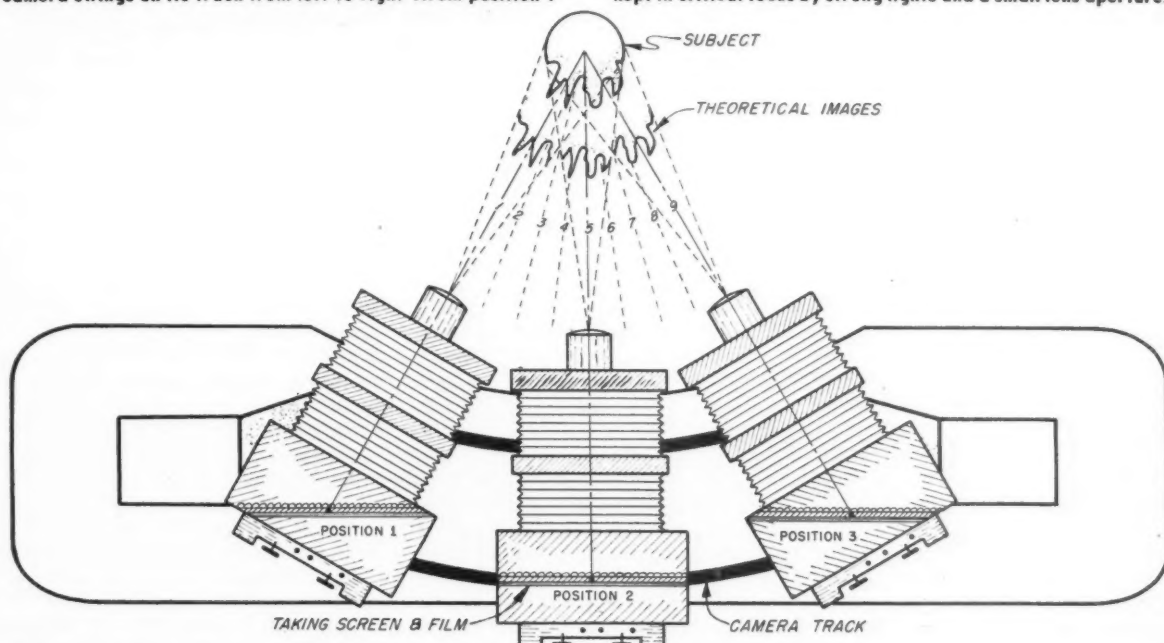
Prices for this work are based on quantity and sizes desired.

Negatives can now be provided in the following sizes: 4x5, 5x7, 8x10, and 11x14 inches.

Most work is done in color film, affording a genuinely natural appearance. None is hand tinted. Size of negatives is at present limited by availability. Film manufacturers do not (at this writing) make color film larger than 11x14 inches.

• Schematic bird's eye view of camera in action shows how the one-lens camera does the work of both your eyes. As the camera swings on its track from left to right (from position 1

through position 3) the lens is open, and the plane of the film holder remains unchanged. Image covers the entire film, and is kept in critical focus by strong lights and a small lens aperture.





# Fire Away With Different Fuels: This Burner Treats 'em All Alike

Manufacturing and processing operations in southern California usually rely upon natural gas to solve their heating and drying problems, part of the year.

But during the peak heating season, there is not enough gas to supply all users, and many industries agree to use a substitute fuel for that time.

Changing fuels, however, has presented problems. Different fuels mean different burning characteristics, different temperatures, and different burning apparatus, each individual to the type of fuel being used.

## One Answer

Perhaps the answer to this industrial worry has been presented in the form of a single unit that overcomes most, if not all of industry's objections to the idea.

This new system operates on gas or a substitute. Different fuels burn with almost identical temperature, flame, and combustion characteristics. Switch from one fuel to another is made instantly, by tripping a selector switch. There is no need for changing burners or recalibrating instruments and controls.

## Plus Benefit

Besides solving the immediate problem of switching fuels, this system may also offer other equally important benefits to industry. For instance, a large southern California paper mill installed this equipment on an experimental basis to satisfy one of their local industrial problems—drying the paper during the manufacturing process. It accomplished that objective, and more. They found:

## Some Result

- (1) The burner raises temperature of the paper from 75° to 180°F. in less than two seconds;
- (2) It increases the speed of drying equipment up to 15 per cent;
- (3) It boosts the plant's output from 15 per cent to 18 per cent daily.

Technical problems involved in development of a practical and speedy change-over device rest in the fact that a pre-mix gas flame is a comparatively

short, blue flame; substitute fuels such as kerosene or oil burn with a long red flame. The problem was to vaporize a substitute fuel so that it would burn with a short, blue flame comparable to that of natural gas.

## Different Fuels

In this system fuel is injected through a combination (gas or liquid fuel) venturi-type proportional mixer. This enables use of any gaseous hydro-carbon fuel such as:

1. Natural gas
2. Manufactured gas
3. Liquefied petroleum gas; or any light-weight liquid hydro-carbon fuel such as:
  1. Gasoline;
  2. Kerosene;
  3. Kerosene distillate;
  4. Stove oil;
  5. Naptha, etc.

Air passage through the proportional mixer remains the same regardless of fuel being used. When oil is the fuel, air is pre-heated to insure proper vaporization.

Experience in the paper factory using this system showed that by adding a bank of these burners, operating speed of steam drying rolls was increased from 300 to 345 feet per minute.

## Plant Capacity Boosted 16%

Without added materials or labor, this equipment boosted the plant's capacity by about one-sixth. In addition, other important advantages have been brought about.

Intense heat from the flame tends to consume the resin on the surface of the paper, retarding deposit of this substance on drying rolls. Accumulation of resin on drying rolls tends to act as an insulator, preventing direct contact between paper and steam roll, with resultant loss of heat transfer efficiency. Effect of the burners is to afford better contact between paper and steam rolls, and increase heat transfer efficiency.

Since the strength of the paper sheet increases as moisture is dissipated, use of a direct flame in accelerating the drying of the paper permits production of a better sheet without reduction in speed of machine operation.

Mitigation of resin deposits permits longer periods between machine cleanings. Operation with a higher test sheet results in less down time from breaks and tears in the paper as it goes through the drying rolls.

The fuel system and burner equipment are entirely automatic, requiring no increase in labor for operation of the paper-drying machine.

## Minimum Labor Loss

Although employees handling finished products are kept busier because of increased production, loss of labor through non-productive effort for rethreading, cleaning up after breaks, etc., is kept to a minimum.

No additional fuel is consumed. Tests have indicated conclusively that the fuel required for the direct flame application reduces the fuel required under the boilers by an equal amount.

## Direct Flame Contact

This is possible because of increased heat transfer efficiency from direct flame contact. Heat transfers from a 3000° F. flame to the paper more rapidly than from a 300° steam roll.

Accelerated drying of paper is accomplished by threading it between opposing banks of line or ribbon gas burners, installed between the second press and the first steam drying roll.

## How It's Done

While paper cannot be completely dried through application of direct flame, temperature of the roll can be raised almost instantly to a point where the steam rolls become immediately effective.

A direct flame can be applied to the wet paper without injury to it, since kindling temperature of the paper is 375° F. and the temperature of the paper cannot exceed 212° F. without



complete evaporation of all moisture.

This condition cannot occur during the brief time the paper is subjected to direct flame.

### Opposed Burners

Burners, which produce a sharp, intense flame directing heat with high velocity at an angle of 90° to the wet sheet are placed one on each side of the sheet. Thus, the blast from one burner is opposed by that of another burner on the opposite side of the roll.

Under normal operating conditions burners are fired by natural gas served by the Southern California Gas Company. Each burner consumes seven cubic feet of natural gas to the inch per hour. It produces a blue flame generating a temperature exceeding 3000° F. For standby purposes, the burners are designed to use kerosene, oil or other light fuel, which when vaporized in a Petro-Fire Combination Oil-Gas System, burns with combustion and flame characteristics identical with natural gas.

### Automatic Controls

Burners are lighted by pressing a button that opens an electric fuel valve and simultaneously sends an electric spark to each burner. Once the flame has been established, a flame failure protection safeguard holds the electric fuel valve open after the push-button has been released. It instantly closes the fuel valve if the fire becomes accidentally extinguished. If the sheet stops because of a break in the paper strip, or because of mechanical failure of the machine, a switch attached to an idler instantly closes the electric fuel valve and extinguishes the flame.

As the paper passes from the press to the dryer rolls, it travels between the burners, two on the press side and two on the dryer side. These burners are set between 12-inch sections of four-inch ply cast refractory cement independently supported by steel. This serves to space the burners and the confine the flame and combustion gases to an area close to the sheet.

### Heat Is All Used

Waste heat created by the bank of burners is not dissipated, but is drawn off by a No. 27 Buffalo blower mounted on the rafters directly over the asbestos hood. This heated air attains a temperature of 325° F. It is then conducted through a two-foot diameter galvanized iron piping system and used in conjunction with a vapor absorption system for dispersal through smaller outlets against the paper and the felt which carries the paper through the machine. This heated air removes moisture from the felts, keeping them from rotting, and materially increasing felt life.



• Bank of direct-fired natural gas burners between second press and first steam dryer.

• Drying process is completed as paper travels through these 28 steam dryer rolls.



# Mechanical KINKS

By W. F. SCHAPHORST  
Former Engineering Instructor  
New Mexico State College

## One Way to Cure Flickering Lights

Not so many years ago the writer had an experience with flickering electric lights that may be of interest to readers who are having similar trouble or who may have such trouble in the future.

The engine being operated was of the flywheel governing type — a so-called "high speed" type—directly connected to the generator. The electric lights flickered rather badly and the writer was at a loss as to what to do to remedy the defect. He "tinkered" with it, but his tinkering didn't help. When new, the engine operated satisfactorily, without causing the least flicker; therefore the writer knew, of course, that it would do so again if properly repaired or adjusted.

The matter was finally taken up with the manufacturer of the engine, by letter. The maker instructed the writer, telling him how to adjust the governor to make certain that it was in correct position, and be sure that it was not sticking.

Several communications passed between us before they began to inquire about the piston valve. This valve, which had solid heads, had become badly worn and was leaking steam in every position. As soon as a new piston was obtained and the valve housing re-bored to prevent further leakage, the flickering of the lights stopped.

## A Neat Trick To Make Things Stick

Sometimes it is desirable to press a sticker or gummed label upon an uneven surface or to do similar pressing on uneven surfaces. There is hardly anything handier for this purpose than a small bag of fine shot. Mercury is better, but of course mercury is much more expensive and under high pressure may be forced out. Mercury can be held in a bag in about the same way as shot. When extreme pressure is wanted, the bag of shot may be placed between the surfaces to be pressed with an additional weight on top. The pressure is then evenly distributed over the entire area, something that cannot be accomplished with a flat pressing surface or even with ordinary soft surfaces. A bag of shot kept about the desk or wherever pressing of this nature is done often comes in handy.

## A Cheap Scraper For Small Jobs

If you have some old scraps of window screen lying around, you can utilize them at various times for scraping soot, scale, rust, dirt, and the like from surfaces on which such matter has attached itself.

Every reader is doubtless familiar with steel wool and its use for scraping and cleaning. The old window screening can be made to serve the same purpose. One way, if the sheets of screen are large enough, is to make a "mitt" into which your hand is thrust, and you can then "go after" the adhering matter with telling effect. You may not like to get your hand dirty, but you can do a better job in that way because you can "feel" the surface with your fingers through the wire screen and even through a cotton glove that can be worn inside the wire "mitt," if desired. For places that cannot be reached by hand, tack a wad of crumpled-up window screen on the end of a stick and use that as a scraper.

## How Many Gallons Per Minute?



A simple and dependable way in which to determine the rate of water flow through a pipe, hose, fitting, etc., is indicated in the accompanying sketch. The laws of falling bodies tell us the exact velocity of water falling through the distance H. Therefore that selfsame velocity must exist at the end of the pipe in order to throw the water up to the height H. Hence, working it out, the following simple rule results: Multiply the square root of the height H in inches by the square of the internal diameter of the pipe in inches and then multiply that product by 5.65. The result is the number of gallons flowing per minute. For example if the height H is 16 inches and the diameter is  $\frac{1}{2}$  inch we get  $4 \times \frac{1}{2} \times \frac{1}{2} \times 5.65$ , which equals 5.65 gallons per minute.

## Lubrication and High Temperature

Not long ago a large concern in the middle west had been experiencing difficulties in moving their oven trucks after they had been in the ovens. Due to the intense heat of the ovens the wheels of the trucks would stick and it was difficult to roll them out.

To eliminate this difficulty they equipped 500 of their trucks with special fittings which they thought would solve the problem. But they didn't use the correct lubricant. They did not make any change in lubricant. They found that the high temperature in the ovens still caused the oil to carbonize and it was next to impossible to turn the wheels. No improvement was noted. They tried several other greases but the results were all the same.

The problem was finally solved by removing the special fittings and using a high grade enameling conveyor oil which is now applied by means of an ordinary squirt can. There is no more carbonizing or sticking of wheels. They are very well pleased with their "find."

I am writing this only to show that there IS a difference in lubricants—that lubrication is a very important problem. Many times problems that are thought to be structural and complex, as in the instance above, are problems for the lubrication engineer and are simpler than they seem to be.

## Welding Stainless Steel Alters Its Characteristics

Many readers will doubtless be surprised to learn that stainless steel, too, has its faults. This writer has been lauding the new metal rather enthusiastically and he has now learned that it DOES give trouble once in a while. But, not so much as real stainless steel as when it becomes modified metal.

For instance, stainless steel makes an excellent lining for tanks. However, during the lining process it is sometimes welded, and that's where the difficulty arises. In the welding process the stainless steel often becomes an altered metal and that portion that is altered sometimes does not stand up as well against acids, corrosion, etc., as does the original metal. So, that is an important thing to guard against. As a result some users are now resorting to other ways in which to join the metal so that its composition will not be altered.

When designing or installing machinery it is usually advisable to check and re-check important figures carefully so that possible errors will not creep through.

This diagram represents a conveyor belt operating at a definite angle with the horizontal and at a constant speed. If it were not for gravity, the particles conveyed would move on into space through the unit distances "L" with each time increment and along the straight line XY.

During his checking the above engineer discovered that one of the vertical fall figures was incorrect. He checked with another catalog and found the same error. In fact he found the same error in four catalogs and so, naturally, came to the conclusion that the manufacturers had carelessly copied an original source, or had copied each other, without doing any checking whatever.

Believe it or not, engineers who have made a study of combustion and boiler efficiency state that if furnace linings do not burn out every once in a while it usually is an indication of inefficiency. So don't be disturbed if that happens to your furnace lining as it really means that you are doing a "good job."

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Thus in one instance an example is cited where a furnace lining had been renewed only about once in six years. Changes were made in the operation of the furnace so that the temperature of combustion was increased. Then as a result, the sidewalls and arches burned out within a year, but about \$24,000 worth of fuel was saved during the year.

Think it over and you will readily understand why high temperatures are more efficient. (1) By using too much air it is obvious that a high temperature is impossible because the surplus air must be heated. Likewise by using too little air combustion is imperfect and the temperature cannot be high. Therefore, a high temperature is an indicator of the right amount of air. (2). The higher the temperature the more rapid is the mixing of the gases and the more efficient the combustion of the fuel. (3). By having a high temperature there is a greater temperature difference between the water side and the heat side of the boiler tubes. It is well known that the greater the difference in temperature the more effective and efficient is the heat transmission.

The accompanying sketch shows how to coil hose, rope, wire, etc., so that there will be no "kink." That is, coil it in the form of a figure 8. The sketch shows how this writer coils his hose—over two metal cans 12 inches in diameter. By doing it in this way the "other end" of the hose, not visible in the sketch, can be permanently attached to the pressure water line making it unnecessary to attach and remove the hose every time it is used.

Welding is superior to babbitting for closing holes, but this sketch shows a method successfully used by a repairman for closing holes in castings, and it is recommended for temporary work—when no welding equipment is available. This method is quicker than any other this writer has encountered. Ordinary babbitt metal is used by this man, but ordinary lead or similar metal having a low melting point can be used just as well.



## Accurate Test For Oil in Boiler Water

If at the end of a sufficient time there is an accumulation of bubbles on the surface of the water, you can be almost positive that there is oil and plenty of it in the water.

The test is really quite sensitive, and one which any boiler operator can perform with amazingly accurate results. If at the end of the shaking period there is no evidence of bubbles at all, you can be pretty sure that the amount of oil in the water is too little to cause any harm. This kink comes from a former chemist whose specialty was boiler waters and their treatment.





• Tong shaker removing tongs from a log on top of cold deck.

• Tongs set, cable starts to take hold, and log is on way up.



• Setting tongs on a log before it goes up the pile. Pond man, in background, brings more logs into position for tong setter.



• Tongs on way down. Signalman and "A" frame on top of pile.

## COLD DECKING INSURES A HEAP OF LUMBER

A lumber mill's best insurance for continuous mill production is a good supply of logs. Giustina Brothers Lumber Co., at Eugene, Oregon, provide this insurance for themselves at the rate of about 175 thousand feet of timber per day, when necessary, by cold decking.

They cut about 32 million feet of logs per year, along both sides of the McKenzie River, and they haul these logs from 38 to 65 miles by truck to the company pond. This pond, covering about seven acres, normally holds enough mill supply for only a three weeks' run.

Since part of the logging is done at an elevation of 4,000 feet, where snow blows in from five to ten feet deep in the winter, it is necessary to build up a cold deck of logs to about 5 million board feet, or approximately two months' sawing to keep their mill busy.

This cold deck is simply a mat of logs laced together with cable, held together in such a way that they will sink together in a body as the pile is built higher.

For this operation, the crew consists of a donkey engineer, a signalman, a tong setter, a tong shaker, and a pond man.

Equipment consists of a donkey, cables, and tongs. The donkey is a loading mechanism affixed to an "A" frame, to provide height for the cable pull. As the log pile is built higher, the donkey is pulled up so that it is always on top of the pile, at the highest point.

A fully built cold deck for this operation is about 500 feet long and 75 to 80 feet high. Because the logs taper in length, it is necessary to keep them straight and lined up to keep the pile from tipping over.

During the winter when the State highway is closed because of a freeze, without this pile of insurance Giustina Brothers would not be able to keep their mill running.



# LABOR

and the  
INDUSTRIAL WEST

By J. B. FITZGERALD  
Western Industry's  
Labor Relations Analyst  
(Formerly Manager, Lumbermen's  
Industrial Relations Committee, Inc.,  
Portland, Oregon)

"The place of the aged in society is a long-run, national problem. It deserves solutions fitting to its characteristics. The challenge is to perceive solutions which will preserve freedom and opportunity while yielding such reasonable security as employees and citizens have come to consider appropriate."

## Labor Dilemma: To Keep Both Freedom and Security

**W**E HAVE more older people now than heretofore. These are more security minded. The prospect of old age, like old age itself, influences views of society and self. Today one-third of all voters are over 50 years of age; 25 years hence, 40 per cent will be. Age can be a powerful coalescing force for a political bloc.

Urbanization and industrialization, the twin moulders of our changing society, have made their important contribution to the fight for security. The family, the traditional source of security in age, has shortened its typical span from three to two generations.

The factory, with its fluctuating labor force, has supplanted the farm, which was almost as impervious to employment shocks as it was sensitive to price changes; and which accepted and utilized the older person, who was venerated rather than rejected. Economic progress brought insecurity; and insecurity a hunger for security.

Desires and goals of men change, and thus it may be that when security has been attained, some other goals may take its place, but the assumption may be made that now the desire for security must be more fully satisfied.

### Security Satisfaction

Collective bargaining is one way. Nation-wide there were about 600 plans (for pensions) in 1939; and today there are 13,000. Collective bargaining in the United States was almost a century and a half old and in that year bargained plans were a rarity. Samuel Gompers was deeply opposed to company pension plans, believing they were a chain to workers today and a mirage tomorrow. Nor did companies undertake plans on their own initiative.

In 1939 private pension plans were limited to a few unions and a few companies. Then came the deluge; but it did not flow so much from the natural devel-

*Digest of a Presentation to the N.I.C.B.  
By CLARK KERR  
University of California*

opment of collective bargaining as from government policy. Private pensions are more a consequence of governmental action than an alternative to it.

### The Reasons

War pressures for manpower and rising costs of living, together with high excess profits taxes, led many companies to establish pension plans. The current costs in the face of excess profits taxes was nominal and the current advantage in a tight labor market substantial. Meanwhile, retirement benefits under the federal system were becoming increasingly less adequate due to the rise in living costs.

### The Shining Example

What was at first voluntary, if induced, later became coerced. Imitation is the key to survival for many labor leaders. Few are so frequently imitated, however inadequately, as the president of the United Mine Workers. When the federal government, through the person of Secretary Krug, completed the Krug-Lewis agreement in May 1946, pension and welfare plans became a bargaining issue *par excellence*. What Lewis had accomplished, others must seek. Union leaders sought both pensions and welfare plans.

Then the National Labor Relations Board, in April 1948, in the Inland Steel-United Steel Workers case ruled pensions were a bargainable commodity under the Taft-Hartley Act. Later, in September 1949 the Steel Industry Board, appointed by the President of the United States recommended the basic steel companies and the steel workers union bargain on pensions. They bargained.

Thus the issue has been raised to one of national import not by the natural

evolution of free collective bargaining, but by the intervention of the federal government at critical points. Private pension plans are more the creation of, than the cure for the "welfare state," if cure there is or need be.

Collective bargaining is an accepted instrument for establishing many important rules in our society. Some issues are more suited to solution through this process, however, than others. Wages and hours of work are examples of items which can be treated best in this way. But pensions are an unusually complicated matter for negotiations. Pensions are extremely technical and they don't apply to all employers alike, even in the same industry. Wages are not technical. All employers are expected to pay them, but paying pensions is quite another matter. Wages and hours change, up and down. Pensions are entirely something else.

Pre-war pension plans were limited almost entirely to companies with 500 or more employees. There are 5,000 such companies in the United States, or less than one-tenth of one per cent of all firms.

### Small Business Is Big

Ninety-five per cent of the business firms, or 3,250,000, have fewer than 20 employees. The large firm, the old firm, the prosperous firm, may be able to absorb a pension plan quite readily. Not so the many small firms. Adequate financing at the outset, if past service is credited, is beyond the grasp of many small firms.

Full funding of a pension, which is the only way to assure the employee security if the company fails, costs approximately \$4,000 for one employee aged 45, if he is to retire at age 65 with a \$50 per month pension.

The chief count against bargained pension plans, however, is their unfortunate social consequences. By their very nature private pension plans as-

sure great inequality. What about many workers? The self-employed, the casual workers, the employees of very small firms, many of the unorganized, some of the members of the weaker unions?

Marion B. Folsom in the *Atlantic Monthly*, August 1949, estimated that less than half of the gainfully employed could be covered by private plans. Under many private plans, the cost of providing a pension for the man over 40 or 45 may keep him out of a job and so from participation.

### A Danger

Free labor would be endangered, its freedom to move checked. Most private plans do not provide for full vesting of the employee's pension rights, so he cannot take his pension earnings, if any, with him. He may have to stay where he is because of the pension. Yet, a recent study made in the Oakland labor market, covering the heads of 1,000 families, shows that the average worker has had a new job every three and one half years, or 10 to 12 in his working life.

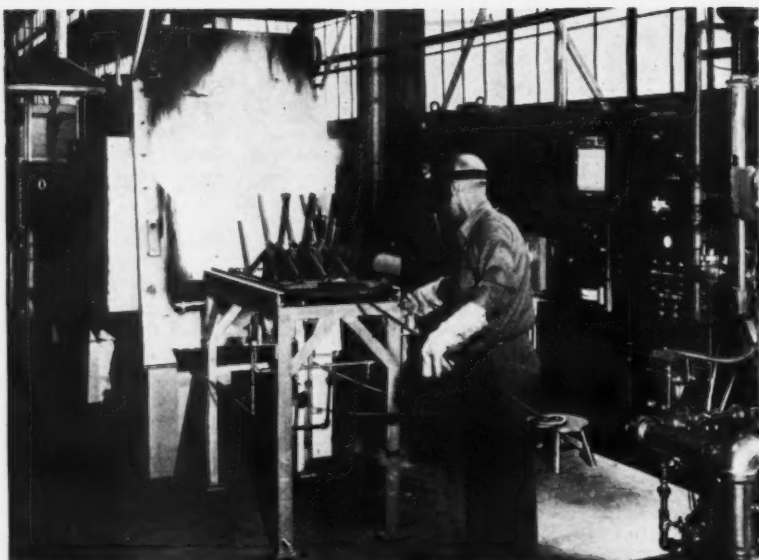
Under a private plan, not fully vested, discharge by the company or by action of the union will lose the individual both his job and his earned time on a pension. Greater subservience to company and union may ensue than is proper for a free man.

Instead of going into social service work, industry might do better to continue to concentrate on efficient production, and the union might do better to stick to representing the worker on the job.

It is perhaps worse to promise security and fail to provide it, than not to promise it at all. Many current private pension plans are certain to disappoint the expectations aroused. Companies may fail without having made provision for adequate funding; workers may leave their jobs or lose them through prolonged layoffs and find they cannot take their pensions with them. If this happens often enough, private pension plans will reap a whirlwind.

Many plans are quite unsound. Unions anxious to make a quick showing, and companies anxious to cut costs, have developed plans destined for eventual insolvency. The *New York Times* has warned editorially (April 9, 1949) "that the first major economic collapse will send them toppling with attendant disillusionment and hardship to those who counted on them for security."

Employers and unions usually know where each stands and why. Not on pen-



• Tubular frames, about to be pushed into a special furnace at Boeing Airplane Co., are made of several parts, snug-fitted and then "loaded" with copper wire. When heated in the controlled furnace they come out brazed into a "one-piece" assembly.

sions, though. Unions, who should, by history be against private pensions are driving for them. Employers who should by their record favor pensions are fighting against their acceptance. The employers are divided, so are the unions.

The pension issue pits the young vs. old (in unions); the short-service vs. the long-service; the temporary vs. the permanent; the mobile vs. the immobile. To some, pensions mean security; to others, a fraudulent denial of gains otherwise forthcoming.

Pensions can be used in competition with wages between unions to whipsaw employers. Some unions don't want pensions from the boss; some do. The "does" get a pension and the "do nots" demand a wage increase; then the "do" crowd go after more wages or more pensions.

Private pensions may seem at first glance one alternative to the "welfare state." Private plans may set higher and higher standards, as pension plan chases pension plan in the collective bargaining

process. Those not covered by private plans will demand equal treatment from the government, as their more fortunate brothers. Further, these private plans will not remain long uncontrolled. In fact, they are controlled by the Internal Revenue Code, and demands for further control are not far off.

What will happen to the employer's ideas when federal regulations descend, employee welfare takes on new forms and dimensions, and unions attempt to place pension plans on an industry-wide or area-wide basis, as the United Automobile Workers union is now doing in Toledo?

There is an alternative to private pensions.

"The proper approach in our judgment," states the *New York Times* editorially (April 9, 1949), "is to make our government social security sufficiently comprehensive to reduce the need for the establishment of special programs through collective bargaining." This is the position, essentially, taken by the Advisory Council on Social Security appointed by the Finance Committee of the Senate in 1947. This committee included six persons from industry, two from labor, four from public agencies and five from academic life.

Sixty-five is not a magic age. It is a convention of the labor market, unscientifically developed and accepted. Actually, chronological age is a rather poor indication of physiological and psychological age, and it is the latter which relate the more to job performance. We might better approach retirement on a case by case basis.

### MR. KERR'S SUGGESTIONS

1. Adequate federal social insurance program.
2. That private plans include credit for federal benefits, for reasonable vesting and proper financing, and not discriminate against older job applicants, and that the federal law be revised, so that unless initiated by the employer, bargaining over pensions no longer be necessary.
3. That investigations be undertaken directed toward the conservation of the labor resources of older workers for their sake and for the sake of the nation.

# GENERAL WAGE CHANGES IN PACIFIC - ROCKY MOUNTAIN REGION

NOTE: This tabulation only reports changes. Information on the large number of contracts renewed without change is unavailable. Therefore the tabulation should not be construed as an indication of the overall trend.

Compiled from various sources by Bureau of Labor Statistics, Wage Analysis Branch  
(Where initials of unions are given below: A=AF of L; C=CIO; I=Independent)

| CALIFORNIA   | Location                  | Date   | Amount of Increase        | Number of Workers        | Other Economic Benefits  |
|--|---------------------------|--------|---------------------------|--------------------------|--|
| <b>Lumber and Furniture</b>  |                           |        |                           |                          |  |
| Lumber Yards, Planing Mills, Sash & Door Plants, Lumber Handling Docks | So. Calif.                | 1/1/50 | 5c                        | CJA—A<br>TCWH—A<br>7,000 |  |
| <b>Metal Working</b>   |                           |        |                           |                          |  |
| Ornamental Metal Mfrs. Ass'n (61 companies)                            | Los Angeles               | 6/4    | 5c                        | BSOIW—A<br>1,600         |  |
| Douglas Aircraft Co.   | El Segundo & Santa Monica | 8/49   | 5c                        | IAM—I—9,100              | Shift diff. inc. 2c hr. 5 days pd. sick lve. after 5 years. Liberalized reporting time.  |
| Lockheed Aircraft Corp.  | Burbank                   | 8/20   | 5c                        | IAM—I<br>15,000          | Plus ineq. adj. avg. 2c hr.; min. & max. job rate ranges inc. 10c; 2c for supplementary benefits, "application to be determined."                |
| <b>Miscellaneous Manufacturing</b>                                     |                           |        |                           |                          |  |
| Rock, Sand and Gravel Producers Ass'n                                  | No. Calif.                | 8/48   | 5c                        | HCL—A                    |  |
| <b>Food Processing</b>   |                           |        |                           |                          |  |
| Sacramento Processed Foods   | Sacramento                | 8/49   | None                      | TCWH—A<br>200            | Related Information<br>6 paid holidays.  |
| Basic Vegetable Co.  | Vacaville                 | 8/49   | None                      | TCWH—A                   | 5c nt. diff.; 6 pd. hols.  |
| Monterey Fish Processors Ass'n   | Monterey                  | 8/49   | None                      | TCWH—A                   | Vacation: qual. hrs. 1st yr. raised; 2nd yr. reduced.  |
| French Bread Co.   | Los Angeles               | 9/7    | *7c                       | BOW—A—105                | *Retro. 6/1.   |
| 12 Bakeries  | Los Angeles               | 9/6    | *\$4 week                 | TCWH—A<br>225            | *Eff. 9/25.  |
| Mission Creamery   | Salinas & Monterey        | 8/12   | 5c                        | TCWH—A<br>Drivers        |  |
| Golden State Creamery  | Oakland                   | 9/2    | 5c                        | BCW—A                    |  |
| Sunshine Biscuit, Langendorf Bakery, Mothers Bakeries                  |                           |        |                           |                          |  |
| <b>Lumber &amp; Products</b>   |                           |        |                           |                          |  |
| Lumbermen's Service Bureau (31 yards)                                  | San Diego                 | 8/1    | 3½c                       | CJA—A<br>TCWH—A<br>300   |  |
| Furniture Employers Council of So. Calif. (16 co's.)                   | Los Angeles               | 9/49   | None                      | UFW—C<br>1800            | Related Information<br>1 add. hol. (total 3). Co.'s contri. for ins. employees to union fund \$4 per month per employee (was \$3). *Eff. 1/1/50. |
| 27 Lumber Companies  | So. Calif.                | 8/7    | *5c                       | TCWH—A<br>75             |  |
| Lumber Industries  | Monterey & vicinity       | 8/15   | *5c                       | TCWH—A<br>30             |  |
| 4 Lumber Companies   | Los Angeles               | 8/9    | 5c                        | AFL—57                   | Eff. 1/1/50.   |
| 4 Planing Mills  | Sacramento                | 8/11   | .05625 hr.                | 165                      | *Retro. 8/1/49.  |
| Upholstery Frame Mfrs. Ass'n (6 companies)                             | San Francisco             | 9/49   | Ave. 23c                  | CJA—A                    |  |
| Diamond Match Co.  | Chico                     | 9/49   | None                      | CJA—A<br>300             | 2 wks. vacation after 3 yrs. (was 5).  |
| 40 Furniture Companies   | Oregon & Washington       | 8/16   | None                      | UIU—A<br>CJA—A<br>4,300  | 1 wk. vacation after 1 yr.; 2 wks. after 3 yrs.  |
| <b>Metal Working</b>   |                           |        |                           |                          |  |
| Northrop Aircraft, Inc.  | Hawthorne                 | 8/26   | 5c hourly<br>\$10 monthly | No Union<br>8,000        | Related Information<br>2 add. days vac. & sick lv. after 5 yrs. (total 96 hrs.) 8c shift diff.   |
| Aviation Maintenance Corp.   | Van Nuys                  |        | 5c to 35c                 | IAM—I—400                | Add. vac. benefits   |
| E. H. Edwards Wire & Rope Co.  | San Francisco             | 8/29   | 4c-19c                    | USA—C—140                | 3 wks. vac. after 15 yrs.; hospital plan; add. pd. hols.   |
| Douglas Aircraft Co.   | Santa Monica              | 8/22   | *5c                       | TCWH—A<br>IBEW—A<br>397  | *3 deals with 6 days sick leave. Each retro. 2-7/24. 1-8/1   |



# Western Wages and Fringe Benefits World's Highest

**W**ESTERN employers have long considered their wage rates and other benefits to employees as the highest in the United States, and therefore leading throughout the world. And this has been the rule since at least the beginning of this century.

Wage rate and fringe payments still are on the top side in the West, but a study made by the Employers' Association of Chicago, shows that fringe payments to workers are high among the larger employers in that Midwest area.

A total of 167 companies, employing 152,581 productive employees, or slightly more than 900 workers per unit, reported to the association on the fringe items on which each was paying to employees.

These firms paid \$60,069,352.80 to productive workers for time not worked; and \$516,846,545.21 total wages by the 167 companies, including the cost of fringe benefits; 11.67 per cent of total payroll costs were paid for fringe benefits or time not worked.

The companies gave in each instance the percentage of payroll cost for each of the items for which the individual company was paying. The table below summarizes the report, arranged according to the number of companies reporting as using each item. Alongside is given the average cost per item for each group of firms.

|   | No. of firms reporting per item | Avg. % of payroll cost, these firms |
|---|---------------------------------|-------------------------------------|
| Vacation pay.....   | 167                             | 2.58                                |
| Pay for idle holidays....   | 146                             | 1.88                                |
| Group life insurance....  | 101                             | .65                                 |
| Christmas bonuses.....  | 97                              | 1.52                                |
| Rest periods.....   | 94                              | 2.86                                |
| Group health, accident and sick benefits.....                             | 85                              | .79                                 |
| Washup time.....  | 82                              | 1.37                                |
| Shift premium.....  | 66                              | 1.18                                |
| Miscellaneous (includes safety clothing, suggestion awards, etc.)         | 49                              | .91                                 |
| Pensions.....   | 47                              | 3.32                                |
| Pay for time spent on grievance procedure and negotiating committees..... | 40                              | .27                                 |
| Premium pay.....  | 32                              | 1.35                                |
| Paid sick leave.....  | 24                              | .74                                 |
| Profit sharing.....   | 16                              | 4.00                                |
| Severance pay.....  | 10                              | .27                                 |

Western practice comparisons with this showing of 167 average large employers would be difficult to make with any exactness, but it would be fair to state that any 167 manufacturers and processors in this territory would reply, as did these in the Chicago area that

they paid for vacation with pay. A sort of comparison can be made on pay for idle holidays. This association group showed 146 out of 167 paying for (probably one or more) of these.

The Department of Industrial Relations in the booklet "Union Labor in California, 1948," gives its analysis of 1,241 union contracts in effect in 1948. (Some of these covered one employer, others several hundred.) The Department found that a strong shift occurred between the year 1944 and 1948 in holidays observed without pay to paid holidays.

"Compared with 55 per cent of the 1944 contracts, only 30 per cent in 1948 provided for the observance of holidays without pay. One-fourth of these were in the construction industry," which obviously is not comparable with Chicago area manufacturers and processors.

"Other industries," the department stated, "in which a majority of the contracts surveyed called for the observance of holidays without pay were fruit and vegetable canning; fish canning; lumber and wood products; rubber products, stone, clay, and glass products; shipbuilding and repair; local railway and bus lines; and trucking and warehousing." This is a sizable listing of leading California industries in which a majority—the department does not say how large—does not pay at all for idle holidays.

## Strike Against One, Strike Against All

A ruling laid down in mid-September by the Supreme Court of California under the heading of industry-wide labor contracts, interprets a strike against one firm as being a strike against all firms under the master contract, so far as collecting unemployment insurance is concerned. The ruling resulted from a four-to-three decision on a case involving a 1947 Sacramento bakery strike between the Bakery and Confectionery Workers Union and a member firm of the Wholesale Bakers Association.

The court held that when one firm is struck, the voluntary closure of other companies operating under the same labor agreement does not entitle their employees to unemployment insurance. (Formerly such employees were entitled to unemployment compensation, under an earlier ruling.—Editor.)

## Both Sides Pay in Waterfront Agreement

While the steel industry and the CIO steelworkers were in the throes of trying to wear each other out over the question of whether the employers should pay all the costs of pensions and other employee benefits, West Coast waterfront employers and their CIO union came to terms on a program of employee benefits, and with the union agreeing to pay its fair share.

In a joint announcement made in mid-October the Pacific Maritime Association and the International Longshoremen and Warehouse Union reported that the parties had agreed to finance a welfare-insurance fund by a 1 per cent contribution based on payrolls by employees and a 3 cents per hour of man employment by employers, which divides the cost 45 per cent on the employees and 55 per cent on the employers. The starting date was set for January 1, 1950.

This deal, with some details yet to be worked out by joint committees, will, it is believed and planned, provide longshoremen with life insurance, medical and hospital benefits and disability payments for lost time due to off-the-job accidents or sickness.

In this series of negotiations the parties agreed to leave wages as they were and also settled 19 points heretofore in dispute. Some 14,000 employees are expected to be covered by the terms of the welfare insurance agreement.

Late in the summer a joint agreement was reached between AFL longshoremen and the PMA, covering employees in three Puget Sound ports, in which each party agreed to contribute .8 per cent of the total payrolls, to provide a plan of protection for the employees, covering the following:

Life insurance, insurance for accidental death or dismemberment, Blue Cross or similar hospital plan for non-occupational accident or illness to employees, only; and all covered employees disability benefits not less than those provided by State of Washington law, not to exceed \$40 per week.

## Contribution Increased

In a contract recently re-negotiated between the Furniture Employers Council of Southern California and the United Furniture Workers, among other items agreed to was \$1.00 more per month per employee to be paid to the United Furniture Workers Insurance Trust Fund, making, it was reported, a total of \$4.00 per month hereafter to be paid by the employers.



# 2 ✓ REVERE

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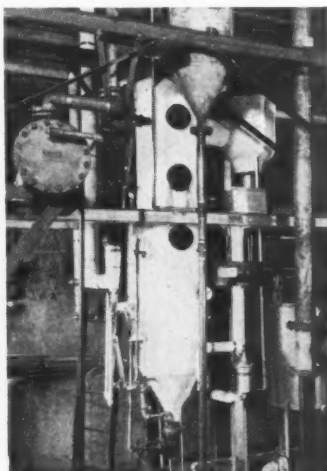
A calandria and six reactors, this is typical chemical equipment that demands the best in basic metals and fabrication methods . . . reliability with low maintenance cost.

Which is why two Revere copper alloys were specified . . . because Revere products and service are the soundest starting point for any manufacturer using copper and its alloys.



A Famous Chemical Manufacturer Uses Six of These Reactors As a Vital Part of Production.

Here again Revere has supplied the correct alloy for a difficult job. Revere's Cupro-Nickel 70-30 is the copper-base alloy most resistant to salt water corrosion. With its great resistance to failure by stress-corrosion and corrosion-fatigue, it is used when conditions are unusually severe. 70-30 Cupro-Nickel has high strength, high ductility . . . can be stamped, cold forged, drawn and bent. It is used for condensers, heat exchangers, and process equipment.



Washington University in St. Louis Ordered This Calandria for Research Work in Their Chemical Engineering Laboratory.

Revere's famous silicon-bronze alloy HERCULOY supplies the necessary tensile strength and resistance to corrosion this combination still and heat exchanger requires. HERCULOY cold-works and hot-works readily, is easily welded by any of the commercial methods, has superior fatigue resistance, is used in operations requiring resistance to alternating and cyclic stresses. It has the corrosion resistance of copper plus the strength of mild steel.

As the chemical industry is doing, more and more industries needing copper and copper-base alloys are turning to Revere for the best in service and guidance. Before placing your next order for copper or copper alloys, call your nearest Revere office. The Revere Technical Advisory Service will gladly collaborate with you.

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Distributors Everywhere.

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## REGIONAL REVIEWS

### Tehachapi to Tijuana

# Aircraft Industry Invites Uncle Sam to Participate in Business

**Aircraft Industries Association suggests that the government should protect current U. S. leadership in air transportation.**

**L**OS ANGELES—Visualize, if you can, the spectacle of an industry actually inviting the Government to step in and design new models for it!

If you can't imagine such a thing, then look what's cooking in southern California's biggest manufacturing industry.

Out of a recent meeting at Santa Barbara, recently emanated a surprising declaration by assembled aviation bigwigs, speaking through the Aircraft Industries Association:

"Government action should be taken," a press statement proclaimed, "to protect current U. S. leadership in air transportation."

This means, the announcement went on to say, that Uncle Sam should "purchase" prototypes of advanced type aircraft, presumably to be built privately and then sold or leased to the aircraft industry, which would put these new models into general production for sale to such buyers as the commercial airlines.

The AIA statement further hinted that Government financing of such sales should be provided.

Behind the dramatic pronouncement can be discerned a number of cogent reasons for the industry's stand:

1. The British are making rapid strides in turbine-powered aircraft and

already have such a prototype actually in the air. This competition for U. S. manufacturers is said to be financed in part with aid of British governmental subsidies.

2. Creating a new type of airplane costs tremendous sums. Right now, U. S. airlines, the major prospective customer, are not in the mood to finance such an undertaking, having just climbed back to a profitable footing after a bad couple of years. Most of them have just invested large amounts in DC-6's and Constellations, requiring a lot of air miles to write off.

3. Although 1949 was aircraft builders' best post-war year profitwise, 1950 probably will end with production on the downgrade. Instead of moving toward the peak of more than 5,000 airplanes per year required for the original 70-group program, orders so far reported by the Air Force out of 1950 funds call for only 1,050 airplanes.

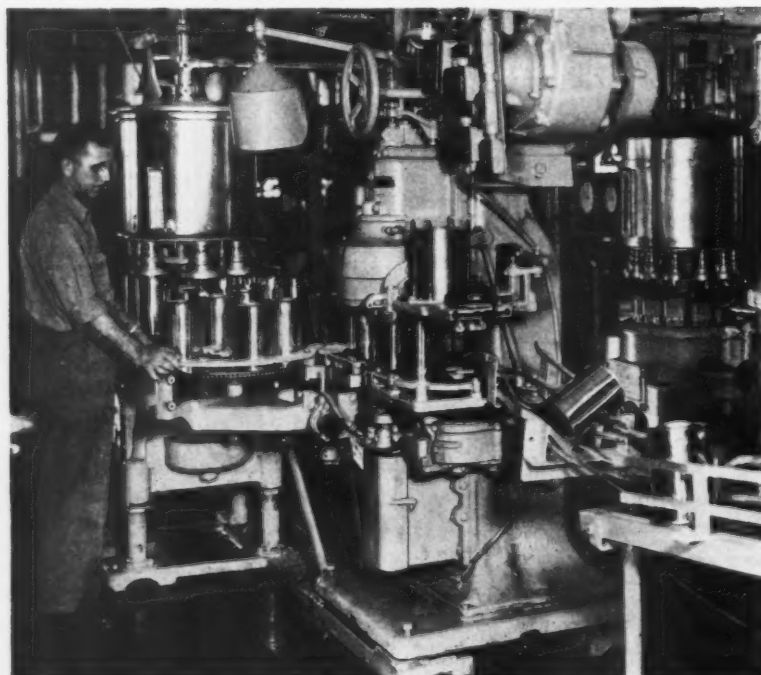
4. Growing indications of a strong economy drive in Congress make it seem probable that Washington purse strings may remain tightly drawn, so that no great expansion in military orders can be expected this year. Meanwhile, not more than 120 airline transport craft and 45 small twin-engine executive planes are expected to be produced in 1950, as compared with about 260 of both types in 1948 and 280 in 1947.

Far from being lackadaisical about the gas turbine, U. S. air men have produced and test-flown more experimental turbine-powered craft than anybody else. Despite these experiments, commercial adaptation still remains a long way in the future.

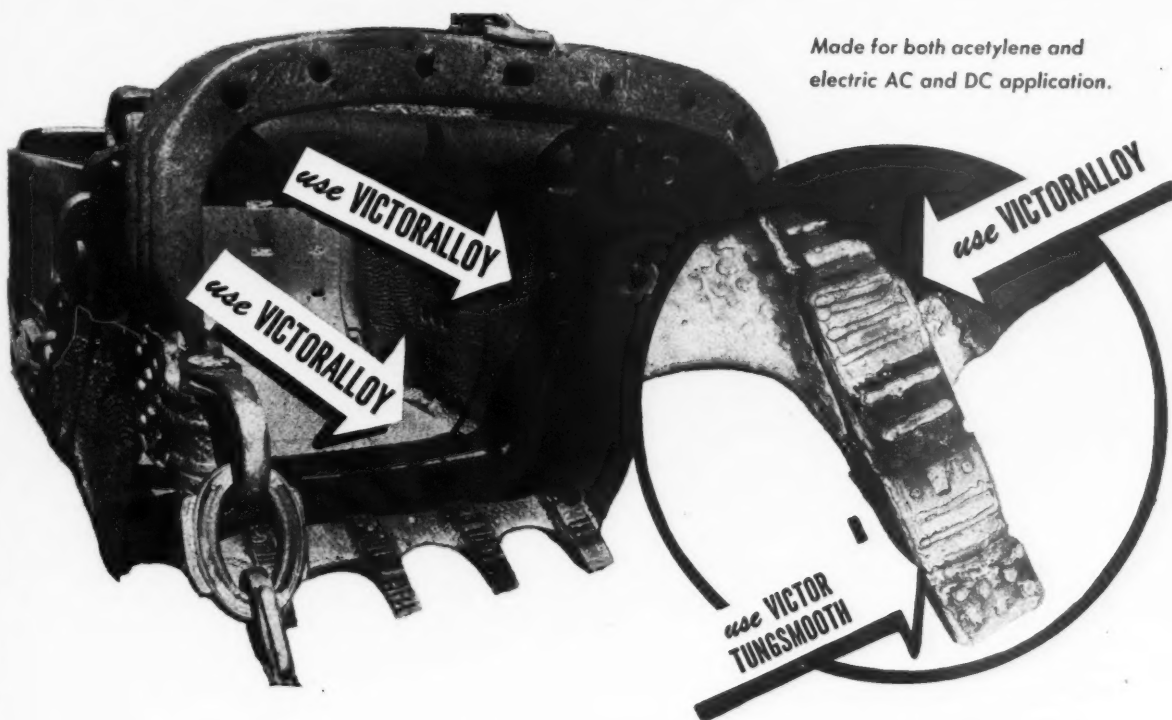
Meanwhile the British have progressed to the prototype stage largely by virtue of a war-time agreement which

(Continued on page 56)

• Not aircraft but orange juice. These cans are filled in the machine on the left, then pass to the machine in the center to have lids put on. Conveyor line at right carries them off to be packaged. Southern California Citrus Foods plant, Anaheim.



# FASTER and SMOOTHER with VICTOR HARD-FACING ALLOYS



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| <b>VICTORTUBE</b>        | Severe abrasion                          | Scarifier teeth, dredge cutter blades, posthole augers, oil field tools, ditcher teeth            |
| <b>VICTORITE</b>         | Earth abrasion or sliding friction       | Plowshares, cultivators, steel mill guides, cement chutes, shaft bearings, rolling mill guides    |
| <b>VICTOR HS 1</b>       | Corrosion, heat and abrasion             | Saw-teeth, carbon scrapers, wire guides, rocker arms  |
| <b>VICTOR HS 6</b>       | Red heat, impact, corrosion and abrasion | Blanking, forming and trimming dies; cams, hot punches, pump shafts                               |
| <b>VICTOR TUNGSMOOTH</b> | Thin cutting edges                       | Coal cutter bits, brick augers, pug-mill knives, screw conveyors                                  |

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## LOS ANGELES REVIEW

(Continued from page 54)

concentrated U. S. efforts on mass production of reciprocating aircraft engines, while the British went ahead experimenting on jets and turbines. The "Comet," for instance, reached its present state of development with official financial support.

### This Is News

Coming at a time when most industrialists fearfully eye any bureaucratic intrusion into the field of private business, the AIA proposal lifted many eyebrows. It sounded like rank heresy, even for an industry which now derives at least 85 per cent of its business from Federal sources. Yet several bills calling for Government development of prototypes actually are now ready for the Congressional hopper.

The AIA says it takes no stand on any particular bill, and it is generally conceded that none of those proposed so far would meet industry approval—particularly the Brewster bill which would have the job supervised by a new "Prototype Board" not responsible to the CAB nor to any other existing Federal agency. Probably the Air Forces likewise would object to such proposals. Significantly, however, it's the first time the AIA has taken a public stand on pending legislation, thus the declaration carries particular emphasis.

### Long Development

Insiders know that between development of prototype turbine-powered transport craft and their widespread use on the nation's air routes, must lie a long and stormy period of development. Undoubtedly much of the knowledge already gained by the military in flying turbine-powered planes can be put to use in adapting the new craft to hauling of cargo and mail.

Commercial operators would love to take advantage of the operational advantages offered by the turbo-prop ship, with speed almost equal to the pure jet plane yet with great economy and longer cruising range. But U. S. landing fields already are becoming uncomfortably small for today's heavy air traffic and modern high-speed planes. The picture of dozens of cargo ships converging at 500 miles an hour or more upon a major air terminal over which incoming craft already are "stacked" sky high, awaiting their turn to land, is an impossible one.

It is fairly safe to predict that the bills now before Congressional committees will wind up where other prototype bills of the past have ended: safely pigeonholed.

Not to be outdone by the feast-and-famine aircraft business, two other southern California industries are going through these periodic crises.

### TV Muscles In

Hollywood, just recovering from the blow dealt it by British film import restrictions, is hanging over the cliff again. This time it's television—and nearby, over another though smaller cliff, hangs the radio broadcasting business.

A survey of television listener habits just completed by Woodbury College sums up the story succinctly:

"TV sets have changed family living habits. TV owners visit friends and relatives less often, read fewer books, and attend less movies." And moving in for the kill, the survey adds bluntly:

"Radio is dead in homes that have television sets."

Some 46% of TV set-owners questioned told Woodbury that they now go to the movies less than formerly. Twenty-two per cent said they thought the literary quality of TV entertainment was better than movies, but 32% doily opined that it was "worse."

### Comes the Readjustment

Radio men, traditionally cheerful and resilient, are able to readjust themselves fairly well because of new openings created in the mushrooming television industry. But film moguls soberly believe that a good ten per cent of Hollywood's movie technicians and talent may as well look elsewhere for work, for it seems doubtful that the industry can return to the "full employment" figure of 34,000 reached in 1947.

It has been no consolation to read that unemployment among British film workers during the past year ran as high as 20 per cent, with nearly two-thirds of the studios idle, bringing the cry to nationalize the industry; nor to learn of huge losses by British Lion Film Corporation and the reverses suffered by the J. Arthur Rank organization.

### About Movie Profits

Heartening though it may be to note world-wide preference for U. S.-made pictures, the fact remains that actually, American companies can make money on foreign releases only to the extent that British films prosper, since 40% of all British showings must be Empire-produced. Profits, moreover, can be brought back only to the tune of the same number of dollars as British pictures earn in this country. Hollywood is fully realizing at last that in past years, nine out of every ten movies have failed to pay off in this country and have had to depend on foreign exhibition to make a profit.

It is perhaps early to say that, in true cinema tradition, the Dawn is coming to Hollywood, but industry men certainly are staging a gallant fight against terrific odds. Supercolossal retrenchments have been made in studio operations, so far-reaching, indeed, as to decimate the ranks of minor officials and other relatives attached to company payrolls.

### Industrial Cooperation

Joint production deals have been worked out with British firms, for pictures to be filmed in England and distributed throughout the Western hemisphere by U. S. interests. A new permanent film industry federation has been set up in Washington with plans for turning the spotlight on industry practices that can be improved.

The Society of Motion Picture Engineers has asked FCC to set aside radio channels for relaying movies from central broadcasting points to theaters which would televise them upon the screen. 20th Century-Fox already is announcing plans to equip 25 Los Angeles theaters for exhibiting televised films and supplement them with "live" stage shows. Actual work, however, would have to await FCC go-ahead, and the proposal flies in the face of the Woodbury survey, which reports that "No" was the emphatic answer to whether TV owners would be willing to pay 25c to see TV on the screen in a theater.

### TV Production Booms

Meanwhile, southern California television factories are booming. Hoffman Radio, which a year ago cautiously predicted that its earnings might possibly double in 1949, rolled up a six-fold net profit in the first eleven months. Packard-Bell is getting ready to occupy a new quarter-million-dollar factory in West Los Angeles. Los Angeles Chamber of Commerce boosters are clocking production to see their home town gradually close the gap in their race to overtake Chicago and become the second instead of the third largest TV producer in the nation. Arizona is getting TV and it is estimated that there may be as many as 8,000 sets in use in Phoenix by 1951.

Capitol Records has decided to move into the TV field, using its record distribution facilities in 47 key cities. Radio unions are in a tailspin with such problems as whether a musician, playing a tune for an AM station, should receive double pay if the notes go out also on FM, and still more money if they filter into the TV frequencies.

Caesar Petrillo reportedly has demanded that a royalty be paid every time a televised film production is shown. And the LATSE has pointed out that it



would be in an embarrassing position should it lower the scales of its technical workers for television and then be confronted with a request by movie studios for the same scales in motion picture production.

With all this going on in an industry which is growing so fast that nobody even has time to count the millions of dollars being lost by the TV broadcasters, the manufacturers meanwhile are making hay. Proving that every cloud has a silver lining—particularly in Hollywood—local manufacturing industry is getting a lift which may be gauged by this estimate released by a highly reputable economist: TV sales here, excluding installation and other fees, last month totaled more than *one-third* as much in dollars as the thriving new car business!

### Pacific Coast Cargoes Are Up

Pacific Coast ports handled 4 per cent more total cargoes in 1949 than in the year previous, according to total longshore hours worked, one rough measure of maritime commerce.

But while total cargoes handled for the full year exceeded 1948 by that figure, month by month business was off about 16 per cent, if measured by only the first seven months of the two years.

The first seven months basis was considered a more valid measure, because those were the non-strike — and non-strike affected — months of 1948. September to December of '48 were blanked out by the '48 strike and August of that year was omitted in the seven months measure because of that month's abnormal rush of pre-strike cargoes.

This was the two-year review of the coast's maritime business, as reported in *Shoreside Report*, published by the Pacific Maritime Association for dock workers from Canada to Mexico.

The full year of 1949 provided 18,300,000 million longshore man hours, 4 per cent over the 17,600,000 figure for 1948. On the first seven months basis, 1949 brought 11.7 man hours, 16 per cent under the 13.8 figure for 1948.

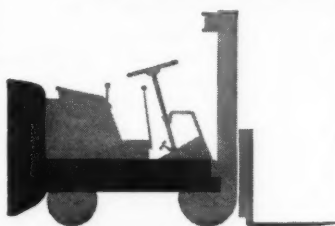
In issuing the figures PMA warned that they do not constitute exact cargo volume comparisons of the two years, but simply one rough measure. Any substantial change in types of cargoes could widen the disparity between an hours comparison and an actual tonnage count, PMA explained.

In their year-end review message to the coast's longshoremen, PMA said that the industry's crew and shore unions and management had provided a foundation for taking advantage of what opportunities 1950 might offer.



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February, 1950—WESTERN INDUSTRY

## REGIONAL REVIEWS

### Sierras to the Sea

# Super-Mechanized Industries In the West Pictured

**Research men see big developments ahead for an area that is not burdened with amortizing plant investments made long ago**

**S**AN FRANCISCO—To get a really enthusiastic picture of what is going to happen in the West, you have to listen to some top research men. What they say would sound like "blue sky," but for the fact that research already has proved itself in startling fashion. And yet commercial research, or the hiring of experts and equipping of laboratories to develop processes and products from which money can be made, is only 30 years old — what a whizzer it will be when it reaches the age of 50!

#### Research Conference

At the second annual Northern California Research Conference in San Francisco last month the cream of the Western research crop seemed to be there. For their predictions, let us lead off with Cleo Brunetti, associate director of Stanford Research Institute. Said he:

"Much of industry, particularly in the East and Middle West, is amortizing plant investments made long ago. In the West we have a different situation. The West is at the threshold of a wide industrial expansion. It is preparing to tap new natural resources. New industry is in position to take advantage of new developments to set up mechanized plants requiring a minimum of supervision and yielding maximum returns.

"The West, for example, is a great cotton producing area, yet does little or no textile processing. Establishment of a textile spinning and weaving industry is an inevitable part of the future of the West, to be followed or paralleled perhaps by a rayon industry.

"Textile processing as practiced today has far to go in making use of modern developments. New Western textile production fashioned strongly around new electronic methods will be more attractive and efficient. Rugged automatic electronic controls will make it possible for the mills to operate at much higher speeds, leading to increased pro-

duction and lower operating costs. They will provide accurate control of thread flow and tension, and precise, uniform stopping and starting of machines without human intervention and errors.

"Older established industries must weigh profits gained with present equipment against possible increased returns to be achieved by adopting new electronic developments."

Dr. Brunetti (who designed and presented to President Truman for his personal use a radio broadcasting set the size of a cigarette case) described electronics as only a step away from regulating the adding or subtracting of ingredients to produce a product meeting pre-determined specifications, methods well adapted to the problems of such Western industries as the chemical, refining and paint industries. He predicted electronic computing machines as another tool destined to play an important part in the future of Western industry, and electronic telemetering as controlling the lighting in taking motion pictures so as to avoid the present problem of keeping a whole cast standing around for hours waiting for adjustment of lighting apparatus.

#### Cost-Saving Principle

More prosaic, but right down the cost-saving groove, were A. B. Layton, vice-president of Crown-Zellerbach Corporation, and Byrne C. Manson, consulting engineer for the California Redwood Association. The former pointed out that only 45 per cent (the cellulose portion) of the raw material required for paper pulp is utilized, and that the remaining 55 per cent, consisting largely of lignin and sugar derivatives, is either burned for the generation of steam or discharged into sewers. Naval stores, alcohol, lanolin and other by-products already have been developed, but there are many more possibilities ahead. Development of by-products from presently unused portions of trees offer the greatest potential for research, in his opinion, and he

pictured the by-products equaling in importance the cellulose portion of the tree now marketed, without the use of one more cord of wood than is presently required.

#### Here's the Problem

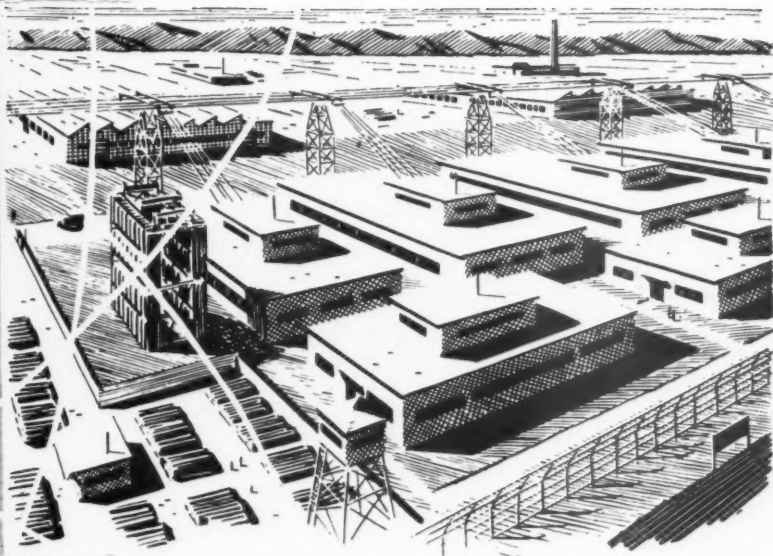
The big problem in wood products research, according to Mr. Manson, is making the results economically feasible. New manufacturing, materials handling and marketing problems are created for which the existing sawmill organizations are not generally trained. Of the residual material in the woods in the form of broken chunks, tops, limbs and defective logs, some may be salvaged in the form of cants to go to a supplementary sawmill to be manufactured into standard lumber sizes, but the only hope for the rest is to reduce it to chips on the site to provide raw material for wallboard, paper pulp, or chemical derivatives. In the mill there are edgings, trimmings, sawdust and shavings, which call for the production of small specially manufactured pieces of wood or conversion into an entirely new line of products, such as paper, wallboard, molasses or alcohol.

"We research men are building bridges between raw materials and markets," announced George L. Parkhurst, president of Oronite Chemical Company, reporting that Western chemical products are competing in increasing measure in eastern markets. Another petroleum man, President M. E. Spaght of Shell Chemical Company, pointed out that the problem resulting from an excess of heavy oils and an increasing demand for lighter fuels will result in a continuous stream of new process developments. He was pessimistic about early developments in the use of shale oil and converting coal into liquid fuel.

The San Leandro City Council has unanimously adopted a resolution approving the use of reclaimed water for industrial purposes and directing the city manager and his staff to work with

*(Continued on page 60)*

# WHEN ATOMIC POWER MOVED WEST



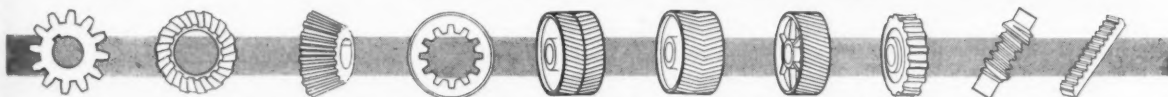
**PACIFIC WESTERN geared products were ready to serve**

The west was selected as an atomic-energy site because of great natural resources, including abundant water and power. Among these natural resources must be listed the great pioneer industries of the west, such as Western Gear Works and Pacific Gear and Tool Works... gearmakers to the west for more than fifty years.

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GEAR PRODUCTS



## SAN FRANCISCO REGIONAL REVIEW

(Continued from page 58)

the San Leandro Chamber of Commerce in further studies.

San Leandro, whose reclaimed sewage effluent is currently flowing into San Francisco Bay at the rate of 1,700,000 gallons per day, is the first city in the state to meet all requirements set up by the California State Department of Health that all sewage be properly treated before entering public waters.

Studies by the San Leandro Chamber of Commerce indicate there are at present only 50 parts of suspended solids

per 1,000,000 parts, compared to the 400 parts per 1,000,000 upon entering the plant. Further refining to only 20 p.p.m. is considered possible by the addition of a small water-softening plant or reservoir.

### Cost of Industrial Water

Present cost of industrial water from the East Bay Municipal Utility District is approximately \$170 per 1,000,000 gallons. Chamber officials estimate that the reclaimed water can be delivered to industrial areas near the plant for as little as \$50 per 1,000,000 gallons.

Westinghouse is spending about \$16,800,000 annually in the West for raw

materials, supplies, freight and other transportation, utilities such as electricity, gas and water, and taxes, according to President Gwilym A. Price on a recent visit to the Coast. In 1948 the company bought in the West the following materials, among others, in the approximate amounts listed:

|                              | Pounds    |
|------------------------------|-----------|
| Steel plate.....             | 5,000,000 |
| Iron castings.....           | 450,000   |
| Steel castings.....          | 780,000   |
| Steel forgings.....          | 54,000    |
| Steel sheet.....             | 1,200,000 |
| Steel bars.....              | 500,000   |
| Steel structural shapes..... | 300,000   |

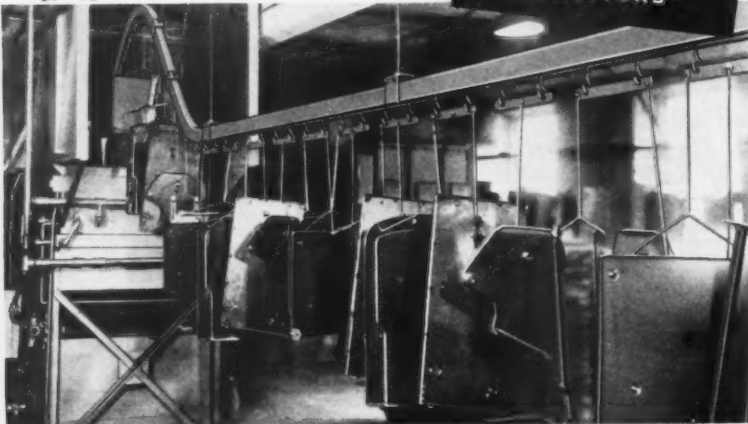
To crate and ship some of the products of its various Western plants, notably Sunnyvale, Westinghouse used in 1948 approximately 890,000 board feet of Western lumber.



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CONVEYORS



Stove parts entering degreaser on R-W ZIG-ZAG Continuous Power Conveyor.

Been wondering what to do about rising manufacturing costs? Even with plant personnel working at top speed, is your production rate still a problem? Your answer could easily be conveying equipment!

In today's highly competitive markets, plants with R-W Conveying Equipment are operating more efficiently, more profitably. Yours can, too!

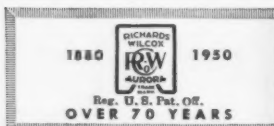
**R-W Conveyors Serve All Industry—** Richards-Wilcox Conveyor Equipment is a major part of production and processing lines in every imaginable industry... increasing efficiency, cutting costs in the handling of light, medium and heavy materials. Why not have an R-W Consultant show you how conveyor equipment, engineered for your production requirements, can step up efficiency and boost profits. Just write or phone the nearest R-W branch office for free consultation—there's absolutely no obligation.

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**"ZIG-ZAG" Continuous Power Conveyors** — Unique powered chain conveyor with extreme flexibility. Designed especially for carrying light loads within confined areas—handles products through degreasers, dip tanks, spray booths, ovens, etc.

**"LOCK-JOINT" Trolley Track Over-Way Conveyors** — Designed for handling light to medium loads, and maximum flexibility. Maximum capacity 3,000 lbs.

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AURORA, ILLINOIS, U.S.A. Branches in all principal cities  
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ELEVATOR DOOR OPERATING EQUIPMENT

## Power People Do the Job

By HAROLD QUINTON

Executive Vice-president  
Southern California Edison Company

THERE will have been 3,400,000 kilowatts of new capacity installed since the war and by the end of 1952 in the Pacific Southwest Power Area, comprising the three states of California, Arizona and Nevada, of which 755,000 kilowatts, or 22 per cent, will have been installed by the federal government.

This is one of the best of the many answers to the federal public power propaganda people that only the federal government is big enough to meet the requirements of our economy.

They would probably respond to my statement by asking what we would have done in the area without the 755,000 kilowatts which the federal government did construct. And I would respond in turn that local and public agencies would have provided such 755,000 kilowatts of capacity, and very probably more, if we had been free of federal interference.

Do the federal public ownership people think for one minute that we would not have prepared for and supplied such a demand; that we would not have stood in their place to receive the electrical machinery from suppliers' production lines? Of course not. They know better. They know that yet today the industry has outstanding many, many unfilled purchase orders.

Some of our friends back in the District of Columbia either haven't read their history, or willfully overlook the fact, that for more than 40 years California was supplied with electric power on a scale and at a cost that have never yet been achieved by any equal area and population in the history of the world.



## Deeper Sales Penetration Needed

**A**FTER six years of abnormally rich markets since the war, the need for deeper penetrating of natural markets is reasserting itself, according to Robert F. Black, president of The White Motor Company, speaking before the Fifth Annual Executives Banquet at the Huntington Hotel, Pasadena.

"The switch to mass production and distribution techniques after the first World War was applied to the structure of sales organizations," he said. "It was found that a larger number of men of mediocre sales ability, working with a minimum of personal direction, could in most cases get a larger share of a big, active expanding market than a small, well-trained organization could.

"But for the job head—which is primarily one of getting deeper penetration in all markets—the typical business is going to require much more sales manpower than ever before . . . well-selected, well-trained, and well-directed.

"Basically, we are going to have to inject more of the human touch into our selling again, both in the salesman's relationship to the customer, but, particularly, in the relationship between the salesman and his sales manager and top policy. This human factor is hard to retain when organizations grow beyond a certain size. That is why you can never successfully increase a sales force beyond a certain size without providing a corresponding increase in the staff to direct it."

As an example of more thorough selling methods, Mr. Black told of a recent event in his own company, where each man in the entire sales organization throughout the country, from Mr. Black on down, was required to ride for a day in one of the new White tilt-cab trucks in the regular service of an owner and also to spend a day riding in an ordinary truck, preferably of a competitive make. The result was the development of many new sales points.

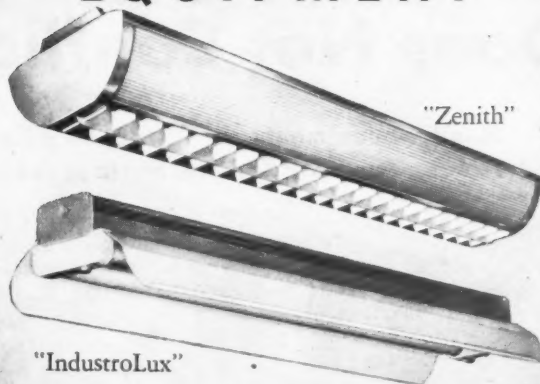
### Chemicals Used in Copper Smelting—Washington Area

Prepared by Puget Sound Chemical Market Research Group

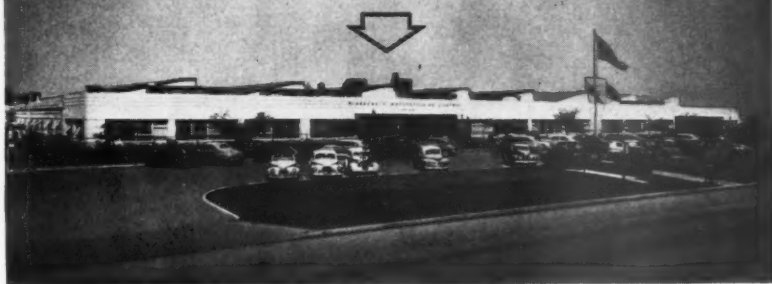
| Materials                    | Lbs./year | Source     |
|------------------------------|-----------|------------|
| Soda Ash.....                | 1,800,000 | California |
| Sodium Nitrate..             | 600,000   | S. America |
| Sulfuric Acid<br>(93%) ..... | 3,600,000 |            |

# SMOOT-HOLMAN

# ILLUMINATION EQUIPMENT



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Like many other modern plants, the new AiResearch building uses SMOOT-HOLMAN Illumination Equipment...such as the depressible-plunger type "IndustroLux" and the "Zenith" luminaires shown above...for efficiency-plus, for employee comfort, for trouble-free maintenance...

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## REGIONAL REVIEWS

### Olympics to the Coeur D'Alenes

# Interior Dept. Six-Year Program Does Not Conflict With CVA

**Heavy investments seen in Idaho pulp mill; Backers still trying to keep Boeing in Seattle; State seeks to KO Puget Sound ferries**

**S**EATTLE — The six-year development program for the Pacific Northwest which the Interior Department is seeking is not a substitute for the Columbia Valley Authority plan, according to C. Girard Davidson, Assistant Secretary of the Interior.

Davidson, who is a strong administration proponent of CVA, said that the announced program would go forward without relation to the proposed CVA and that it was not offered as a substitute program. The proposal announced by Davidson would deal only with Interior Department activities—whereas a CVA would coordinate a regional program for agriculture, defense, and all other federal departments.

#### 1950 Through 1955

The Davidson program would cover the years 1950 through 1955 and about 85 per cent of it would be for construction of major irrigation and power projects of the Bureau of Reclamation and the Bonneville Power Administration. Upon completion, about 2,200,000 kilowatts and 5000 miles of transmission line would be added to the region's power capacity and another half million acres of arid land would be brought under water for cropping.

Department of Interior's program does not, it was pointed out, include any projects under way or contemplated by the Army Engineers.

#### New Pulp Mill

Further word has come out of Lewiston, Idaho, that Potlatch Forests, Inc., which operates three big lumber mills in the Idaho panhandle, will probably have its proposed new pulp and paper mill in operation within two years. In-

vestment in the new facilities will be around \$12,000,000, thus emphasizing once more that to get into the pulp and paper business one has to have plenty of blue chips.

PFI has extensive forest lands of its own under forest management and it also has access to thousands of acres of federal timberland. Decision to enter the pulp-paper field was in part brought about by the necessity of finding further profitable outlet for the minor tree species of the area, which occur in substantial volume, intermixed with the predominant Idaho white pine stands.

#### Boeing Battle

"Keep Boeing in Seattle" defense guns are still booming. The movement, which quickly whipped up into bright flame when Air Force brass declared they intended to move a big part of Boeing Airplane Company's bomber production to Wichita, Kansas, has caught hold on the Atlantic Coast and the Great Lakes area. The All-America Defense Association was recently born in a meeting at Detroit. It is backed by the outer perimeter regions, West, East, and North—parts of the United States which are subject to the same Air Force declaration of being "relatively more vulnerable" that was first applied to Seattle.

Meantime, Boeing still continues to manufacture planes—with some venturing into the field of guided missiles. On November 4 the great new Seattle-built Boeing Stratocruiser initiated direct Stratocruiser service between the Pacific Northwest and the Hawaiian Islands, the Orient, Philippines, Aus-

tralia and New Zealand. Operated by Pan American World Airways, the new luxury ship of the air has a 61-passenger capacity.

Not too incidentally, the new Seattle-Tacoma Airport, rated one of the finest anywhere, now will go forward with plans to extend its main north-south runway to 7500 feet of concrete, with an additional 500 feet of graded, compact overrun for added safety. Cost will be close to a half million dollars.

There's another item pertaining to transportation which is arousing much local interest—and speculation. Puget Sound has, since the beginning of time, formed an all too effective barrier to Westward expansion of the Seattle metropolitan area. The solution since the white man came in numbers has been ferries, but it is an increasingly unsatisfactory solution. Ferry rates have skyrocketed dizzily.

#### State Proposals

Now the state has tossed out a couple of proposals which would knock out the ferries. Opposite Seattle, in Puget Sound, are two large islands.

One plan would call for a submerged, semi-floating traffic tube under the main reaches of Puget Sound to one island and thence by bridge to the Western mainland.

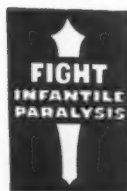
The other would call for a floating bridge—similar to the famous Lake Washington bridge which has proved to be so eminently successful—to the other island and thence by suspension bridge to the Western mainland. Costs are rather astronomical—but folks seem

*(Continued on page 64)*



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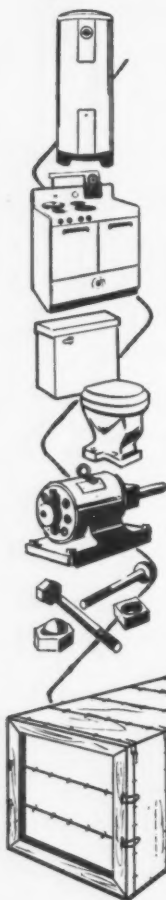
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## SEATTLE REGIONAL REVIEW

(Continued from page 62)

no longer to be alarmed by mere figures. They seem willing to accept results. Anyway, it's an idea—and still, *only* an idea.

Washington State Public Service Commission has refused to grant a permanent 8 per cent boost in railroad freight rates within the state. The Commission did, however, make permanent a temporary 4 per cent increase granted a year ago.

Despite dwindling passenger traffic and other postwar skidding in the railroad business generally, the Great Northern Railway has announced that a program of modernization for passenger service between the Coast and Chicago. New cars, and many more diesel engines, will run the outlay up to about \$9,000,000 and provide two fleets of streamliners on the Coast-Chicago run by the end of 1951.

### Permanent Inland Moorage

The U. S. Maritime Commission has promoted the Olympic moorage, farthest inland of Puget Sound's deep-sea waters, to permanent status as a base for reserve ships. Sixty ships are now anchored there and this number may be increased to about 100. Heretofore USMC had been reluctant to put the permanent stamp on Olympia because of the harbor's salinity—whereas the Astoria base at the mouth of the Columbia reportedly has fresher water. But, and this seems the significant part of this otherwise routine political announcement, the Commission now casually admits that a new electrolytic process to prevent marine growth on ship hulls, which they have been experimenting with for some time, has now proved itself successful. Thus, science, not politics, determines a ship base and maybe "something new has been added" which will lower ship operation costs.

### Christmas Tree Industry

Speaking of little industries, there are three in this area which bear a distinctive Yuletide label and a note of oddity. One of these is Christmas tree production. One of the largest shippers on the continent is located at Tacoma. They ship trees by the carload and almost by the boatload, all over the country and to many foreign ports. Surprising fact to the uninitiated is that the Christmas tree business is not only a business but a year 'round business.

### Holly Production

Second of these little businesses is holly production. This is good holly country. Acreage is increasing year by year and shipments go out all over the

WESTERN INDUSTRY—February, 1950



country. Third is the lutefisk business—dry salt cod to the non-Scandinavian. It is booming around the Ballard section of Seattle, where fishermen and Scandinavians predominate. A good business, and a good food delicacy—if you like it, that is.

#### Fuel Front

On the fuel and power front, there is new talk about an oil pipe line from the Alberta fields in Canada to the Pacific Northwest. So far, it seems to be mainly talk, but two factors that cannot be overlooked are that there is plenty of oil in Alberta and plenty of market below the Canadian boundary. Refining facilities might possibly turn up on the American side, when, as and if, because of certain Canadian controls on oil products.

Standard Oil of California says they are not interested now. They are presently building a pipeline from Salt Lake City to Boise, Idaho—with later projection to Pasco, Washington, contemplated.

#### Power Situation

The power situation has improved. The weather has remained relatively mild and rainfall has increased available storage. The power administrators are more optimistic, but they give out the optimism with a cautious note. There can be upsets in sudden demand. There isn't too much margin. An example was witnessed in the Spokane area when a sudden cold snap hit just before Christmas. Apparently everybody has an electric blanket, space heaters and other appliances these days. Everybody around Spokane must have plugged them in. Anyway, the Washington Water Power Company, which serves the area, said that the power load between 5 and 6 p.m. on December 19 was the greatest on record in the Northwest power pool.

#### Consumption Declines

In overall power consumption, however, some falling off has been noted. Both the municipally-owned system and the private company which serve Seattle showed up to 6 per cent less consumption for November as compared with a year ago.

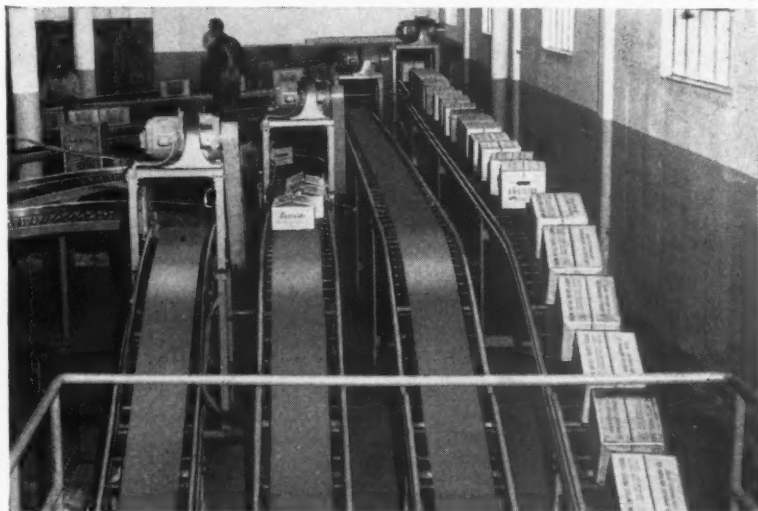
#### Short Bits

Short bits: Washington's welfare program is still draining state revenues at a terrific rate, but a drastic cut in allowances is scheduled for the first of the year. Seattle banks show a sharp rise in deposits. Western governors have urged the establishment of complete military defenses in Alaska. Washington is now to start paying an \$80,000 soldier's bonus and simultaneously levy an additional two cents a pack on cigarettes. Just who will smoke who into prosperity?

## Look at All

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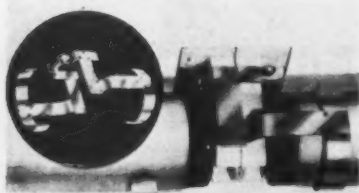
## NEW MATERIALS & EQUIPMENT

E-25023

### Air-Operated Device For Accurate Weight

Of value in all operations in which drums must be filled with liquids is the new Yale & Towne air-operated device for filling drums to the correct weight. Typical liquids so handled are oils, paints, chemicals, syrups, and food products. Flow of material can be regulated to suit. Drums are filled fast—for example, a 52-gallon drum of SAE 30 oil at 95°F in 49 seconds. Extreme accuracy is provided; 442 pounds of SAE 30 oil are weighed within 6 ounces. No electrical equipment or attachments are required, and the device operates safely under hazardous conditions. *Yale & Towne Mfg. Co., Philadelphia, Pa.*

E-25024



### Fluorescent Lamp Guard

A new safety device that affords positive, permanent protection against the hazard of falling fluorescent tubes in continuous run, end-to-end installations, is now available from *Den-El Equipment Co., Hillside, New Jersey*. These guards are quickly and permanently installed with a screwdriver. They are made of specially treated resilient steel that can be sprung aside for cleaning and relamping. There is a guard for almost every type of installation.

E-25025

### \*Surface Finish Filters Sun's Rays

With the appearance of a new surface coating called Infracote, made by *Lite Control Products Co., Nutley, N. J.*, a few industrial problems disappear. This plastic coating absorbs ultra-violet and infra red rays, and has wide industrial uses such as heat protection for factories, show rooms, hot houses, and eye protective devices. Textiles, furniture, leathers and foods are protected from fading and deterioration. Coated surfaces eliminate the need for awnings,

curtains, mats, etc. This material reduces glare in windows with practically no loss of visibility. It is fireproof, is not affected by atmospheric conditions, and should relieve air conditioning systems somewhat.

E-25026

### \*Disc File

A new type of disc file has been developed by *Kennametal Inc., Latrobe, Penna.*, that provides for faster, less costly operations on non-ferrous metals and plastics commonly performed by grinding, such as snagging castings, cutting off flashing, facing, and squaring up surfaces, etc. Expense involved in frequent replacement of abrasive wheels is eliminated. Design and construction afford a most efficient and free-cutting action. Material is removed in sizeable chips with no dust. Four sizes are available: 6", 8", 10" and 12" diameters. They may be mounted on a grinder, abrasive disc machine, motor end, or disc file machine by suitable adapter.

E-25027



### Plastic Surface Paper Plates

These paper plates for cafeteria use will not absorb any food—hot or cold, watery or oily. They are made in three sizes and six shades by *Bowes Industries, Inc., Chicago*. They are coated with a film of odorless, tasteless plastic that makes them gleam like real china, and they have a larger eating surface than an ordinary plate of similar size.

## For Your Convenience . . .

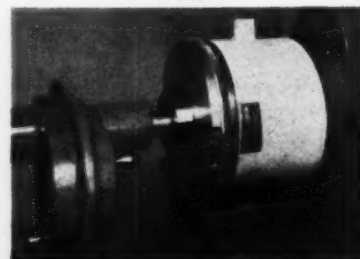
Use this postage-paid card to obtain further information on products mentioned on these two pages and on literature listed on the following page . . .

E-25028

### Collapsible Container

Compak Boxes, made by *G. B. Lewis Co., Watertown, Wisconsin*, are collapsible units designed for low cost seasonal storage and handling. They are made of woven wood-and-wire side and end panels around a sturdy plywood bottom. After assembly, the boxes are banded with steel straps top and bottom. When not in use, boxes are quickly knocked down by cutting the straps. They are equipped with stacking runners to facilitate stacking full boxes in vertical piles and to allow multiple handling with fork lift trucks.

E-25029



### \*Super-Powerful Air Cylinder

A new air cylinder that uses the mechanical advantage of levers, or dogs, to enable it to develop three or four times the drawbar force of a conventional air cylinder is produced by *Erickson Tools Division, Cleveland, Ohio*. Piston is of a "donut" design, permitting bar stock and work to be passed through the unit. It moves  $\frac{1}{8}$ " in either direction and is double-acting. It is ideal for operating both collet chucks and expanding mandrels.

E-25030

### Koldweld Cuts Welding Costs

Koldweld, a process licensed by *Koldweld Corp., New York*, joins metals together by pressure at room temperature without the use of either electricity or applied heat. No flux, chemical or gas is used. There is nothing to be cleaned from the welded joint. Preparations are simple. Only inexpensive equipment is required. In many applications it will supplant brazing, soldering, riveting, and many other conventional methods of joining metals, or it may be used in conjunction with these methods to give improved results.

\*Items evaluated by Western Industry's technical advisors on basis of information supplied by producer.

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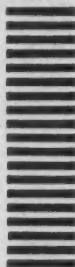
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Also further information on the following products advertised in this issue:

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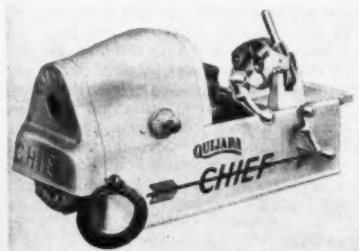


E-25031

### \*Combustion Safeguard

Series 1300 Flame-otrol is a combustion safeguard for industrial and commercial fuel fired furnaces, ovens, boilers, kilns, etc. It uses the flame itself as the "electronic link" in a simple circuit to provide instantaneous switching action. It is capable of detecting presence or absence of a gas or oil flame of any type of burner. *Wheelco Instruments Co., Chicago*, makes it; Underwriters' Labs and Associated Factory Mutual Labs approve it.

E-25032



### Improved Pipe Threader

"Quijada Chief," *Quijada Tool Co.'s* (Los Angeles) improved model in the 1/2" to 2" pipe and bolt size, is a portable model with four jaws in front and four jaws in the rear, that automatically both grip and center the pipe to eliminate whipping. Chucks are automatically operated by a push-pull switch. When the proper thread length is cut, a bell rings, notifying operator to open die head. This unit weighs 160 pounds.

E-25033

### \*Simple Fluorescent Lamp Base

Westinghouse Lamp Division has designed a plastic base with a sloping shoulder and a positioning bump to simplify fluorescent lamp installations. They thereby endear themselves to industry by providing a unit which means an end to fumbling and doubt about proper insertions of tubular lamps in sockets. The bumps are both a guide during insertion and a visual signal that the lamp is properly placed.

E-25034

### Magnetic Door Latch

A simple idea with an important application is the Leco-Latch, made by *Laboratory Equipt. Co., St. Joseph, Mich.* This latch consists of two parts: a permanent magnet (attached to the cabinet door jamb or shelf) and a small plate made of special steel, attached to the inside of the door itself. There are no working parts and no sharp edges to snag your clothes. The latch should last forever and work perfectly all the time.

\*Items evaluated by Western Industry's technical advisors on basis of information supplied by producer.

February, 1950—WESTERN INDUSTRY

E-25035



### Vibrating Conveyor

A wide range of materials can be handled at speeds up to 100 feet per minute on the new natural frequency vibrating conveyor manufactured by *Stephens-Adamson Mfg. Co., Aurora, Ill.* This conveyor, incorporates all the advantages obtainable through the application of principles of natural frequency, and is designed with simple coil supporting springs. Required headroom is only 14 1/2 inches from base to trough bottom. The spring-supported conveying trough may be fabricated in a wide variety of shapes, open or closed, with screen deck for scalping, or with other variations to meet special conditions.

E-25036



### Steel Plate Clamp

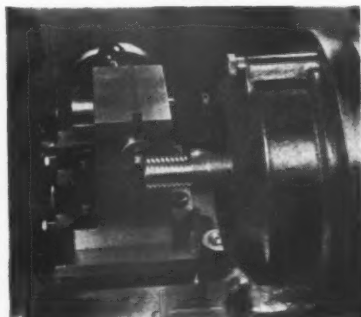
A complete line of steel plate handling clamps, both horizontal and vertical, is manufactured by *Never-Slip Safety Clamp* division of *Kenisco Manufacturing Co., at Mt. Kisco, N. Y.* These clamps are made in sizes to handle plate from 1/8" to 6", and up to 12 tons. That part subject to wear, the jaw surface, is a grooved plate. There is no concealed part.

E-25037

### Water-Tight Fire Extinguisher

An improved model dry chemical fire extinguisher, said to be completely water-tight, is introduced by *Ansul Chemical Co., Marinette, Wisconsin.* This new unit, the Ansul Model B, is more rugged, more dependable, and easier to maintain than its predecessor, the Model A. Among the twelve new features of this extinguisher are: new nozzle design, improved cartridge receiver, and specially designed seals to make these parts water-tight.

E-25038



### Simplified Turret Lathe Thread Cutting Operation

A retractable threading tool holder for use on the cross-slide of *Warner & Swasey* turret lathes automatically withdraws the tool from the work at any desired point, permitting full cuts at full speed close up to shoulders without the necessity for close attention by the operator. Positive, clean disengagement of the tool from the work is assured, while the spindle is rotating. This unit is applicable to all saddle-type and numbers 3, 4 and 5 W & S universal turret lathes. Can be supplied with a knock-off mechanism for semi-automatic operation if desired.

E-25039

### Automatic Aer-O-Foam Fire Protection

Aer-O-Foam liquid is a hydrolized protein manufactured from a soya bean base, and when mixed 6 per cent by volume with water and aerated forms a homogenous tenacious foam blanket capable of flowing around obstacles and quickly extinguishing fires involving gasoline, benzol, naphtha, and many other flammable liquids. Adaptability of this form of protection offers substantial economies to be realized over previously recognized methods of fire control and it now makes possible protection of areas that have heretofore been unprotected because of economic considerations. "Automatic" Sprinkler Corp. of America, Youngstown, Ohio.

# HELPFUL LITERATURE

for the plant operator who wants to keep informed

2501-L

**"Where's That Car of Freight?"**—A new booklet with this title has been prepared by *Santa Fe Railway, Chicago, Ill.* Described is what the railroad calls its "Red Ball Information Service," which works through its great private communications system to keep shipper or consignee informed where his carload of freight is at regular intervals throughout its trip over Santa Fe lines.

2502-L

**Of Interest to Welders** is a newly available eight-page bulletin which describes more than 100 low temperature welding alloys for everyday production and specialized uses. Booklet, which is issued by *Eutectic Welding Alloys Corporation, New York*, contains a selection chart and many case histories concerning use of the company's EutecRods for torch welding and EutecTrodes for arc welding.

2503-L

**New Industrial Crane Described**—The Karri-Go, a new industrial crane which can lift, carry and place loads of any size or shape weighing up to 10,000 lbs., is the subject of a five-page folder which lists its advantages and capacities and contains pictures of it in action. *Silent Hoist & Crane Co., Inc., Brooklyn, N. Y.*

2504-L

**Catalog on Fluid Drives**—The desirability of fluid drives, features of their construction, selection tables, descriptions of kinds available from *Link-Belt Company, Chicago, Ill.*, are covered in a new 28-page catalog put out by Link-Belt.

2505-L

**Roll Handling Truck**—With the trend toward increasing use of roll stock, and the size of the rolls being used growing larger all the time, a need has arisen for a new type of roll handling truck. *Elwell-Parker Electric Co., Cleveland, Ohio*, have designed it and tell the story of how it works in their magazine, *The E-P Reporter*, No. 8.

2506-L

**How They Test Fiberglass**—How the Testing Division of the *Owens-Corning Fiberglass Company, Toledo, Ohio*, came to be established, its personnel and the work it is doing in testing the various products made of Fiberglass is related in a 52-page booklet put out by the company. Photographically illustrated chapters describe method the company's laboratories use in testing thermal and acoustical materials, textiles, reinforced plastics products, filter and mat products, electrical insulation products and also how the company tests for quality control.

2507-L

**Folder on Code Symbol Stamps**—Standard code symbol stamps for identifying inspectors, operations, workmen, dates and specially designed stamps for indicating acceptance, rejection, deviation and other inspection markings are the subject of a new folder issued by the *M. E. Cunningham Company, Pittsburgh, Penna.*

2508-L

**Why Dies Break** is the subject of an interesting and informative article in a recent edition of *Heat Treating Hints*, a newspaper-type brochure issued by *Lindberg Engineering Company, Chicago, Ill.*

2509-L

**Air Conditioning and Refrigerating** systems can be kept in good running order if their coils are free from slime and their condensers rust- and scale-free. A new 19-page booklet issued by *Oakite Products, Inc., New York*, gives extensive information on how to keep these systems clean through the use of the company's various kinds of detergent products.

25010-L

**Smoke Indicator Circular**—*The Trimount Instrument Company, Chicago, Ill.*, has issued a new circular which diagrams and describes their McNeil Smoke Indicator. The indicator, which registers the density of smoke present and sets off an alarm, is a heavy-duty unit, designed by a practical engineer for boiler room service.

25011-L

**Products Made of Neoprene** and varied phases of its adaptability in modern industry (in drive belts, air hoses, roofers' shoes, oil wells) are described in the 12 pages of *The Neoprene Notebook No. 43*, put out by *E. I. Du Pont de Nemours & Co. (Inc.), Wilmington, Delaware*.

25012-L

**"How to Handle Adhesives for Transparent Films"** is the title of a new pocket-size booklet issued by the *National Adhesives Division, National Starch Products, Inc.* An interesting feature of the booklet is the chart describing the properties and characteristics of all principal types of transparent films, including cellophane, plicofilm, polyethylene and cellulose acetate.

25013-L

**Stock List of Ducommun Metals**—*Ducommun Metals & Supply Co., Los Angeles*, have issued their 79th metals stock list—an 181-page booklet containing complete and detailed information on their available stocks of carbon steel, brass, copper, aluminum, alloy and stainless steel. An emergency service page gives telephone numbers for every section of the company's regular trading area; by calling any of the men listed, immediate emergency assistance will be given at any time, day or night.

25014-L

**Materials Handling Attachments**—The different kinds of attachments, tools and accessories you can get to use with Hyster lift trucks, straddle trucks and mobile cranes are described in a 28-page catalog just off the press, put out by *Hyster Company, Portland, Oregon*.

25015-L

**Bakelite and Vinylite** resins used as coatings on various materials displayed at the Paint Industries' Show at Atlantic City, N. J., are written up in a 14-page booklet from the *Bakelite Corporation, New York*.

25016-L

**Fire Pumps**—Both single-stage and two-stage fire pumps and their methods of drive and application are covered, in illustration and text, in a new bulletin from *Peerless Pump Division, Food Machinery and Chemical Corporation, Los Angeles*. In four of the bulletin's pages are described necessary fittings for all approved fire pump installations, and also shown are installations of the various types of pumps and drivers, one of the installations being an unusual foam system employed by the Hercules Powder Company to protect against fire its naval stores plant at Brunswick, Georgia.

25017-L

**Gas Turbines, Jet Propulsion, Rocket Power Plants**—A new and complete bibliography of books and published reports on the above subjects has just been published by the National Bureau of Standards. Publications listed deal with turbo-jet and prop-jet engines, other types of gas turbines, intermittent or pulse jets, ram jets, rockets, jet-propelled helicopter rotors and propellers, compressors, turbines, combustion and combustion chambers, aerodynamics, metallurgy, machining and welding and ceramic materials in gas turbines. Bibliography is available from the *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.*, and costs 20 cents.

25018-L

**Technical Advice on Aluminum**—The *Technical Advisor*, a small newspaper-type brochure put out by *Reynolds Metals Company, Louisville, Kentucky*, contains several articles of interest to those who handle and work with aluminum; one article tells how to polish it with abrasive belts, another deals with the machining of it, and there is a useful table on the shaping and planing of aluminum alloys.

25019-L

**Paint-Mixer Described**—A little four-page bulletin describing a handy paint-mixing device which attaches to one-gallon and five-gallon paint cans and looks very much like a milk-shake mixer should be of interest to all who have ever had to mix paint by hand. *The Standard Churn Co., Wapakoneta, Ohio*.

25020-L

**Industrial Thermometer Data**—Complete data on liquid-in-glass industrial thermometers is presented in an easy-to-use tabular and sectionalized form in the new Bulletin "E" published by the *Precision Thermometer and Instrument Company, Philadelphia, Penna.* Graphic pages illustrate all basic models, sizes, forms and attachments, with simplified application data to enable the user to select proper thermometer for any industrial installation.

25021-L

**"A Primer For Sign Buyers"** is a new eight-page illustrated booklet designed to provide the sign buyer with helpful information covering the important considerations of design, location, manufacture and lighting of outdoor signs. Booklet is put out by *Porcelain Enamel Institute, Washington, D. C.*

25022-L

**Metered Mail**—*Pinney-Bowes, Inc., Stamford, Conn.*, have issued an interesting booklet concerning the findings of direct mail advertising agencies and mail users in regard to the "pulling power" of metered mail as opposed to other types of postage. Booklet also lists and photographs various types of postage meters and mail room supplies made by the company.

## READING GUIDE FOR WESTERN MANAGEMENT

A service for all management levels . . . current literature surveyed and appraised by the faculty of the School of Management, Golden Gate College

### Bottom-Up Management

By William B. Given, Jr., Harper & Brothers, New York, 1949, \$2.50.

After serving in the army in World War I, Mr. Given was convinced that "top-down management" would be inadequate for a successful and human business organization in peacetime.

He believes in the basic principle that the combined judgment, creativeness and initiative of a business produce a better result than autocratic administration by an individual. Mr. Given has indicated no pride of authorship concerning the management principle of decentralization of authority. He explains that the application of this principle to his own company's problems emphasizes the *degree of management freedom*. This freedom includes freedom to fail—for unless there is freedom from punishment for the failure of some daring, untried plan, the precious quality of decisiveness is smothered. Of course this does not imply that a man can fail consistently and still enjoy management's confidence. The risks that are taken must be intelligent and carefully calculated. This progressive decentralization of authority takes for granted a certain percentage of mistakes. The learning process of junior executives is expedited and the errors in the long run will be less costly than the results under top-down, autocratic, one man management.

The author explains the budgetary procedure in his company. Responsibility is placed on the ten Division Managers. The managers are cautioned that failure to spend money allotted to them may prove as unwise as spending too much. He explains that under this system the managers ask advice more frequently than under the old system. The aim is "to make the company a better place to work—a better neighbor in the communities (some 60 in number)—a better company to sell to—a better company to buy from—and a better company to invest in. Each of us can help in some way every day." This was subsequently amplified, "To achieve this aim we must find for everything we do—a better way."

Mr. Given comes to a most significant conclusion: "Understanding people, and being trusted by them, is today a more important qualification for managers than technical know-how. The latter can be learned from books; the

former comes from the heart. He sincerely believes that the term "human relations" should always be substituted for "labor relations."

Perhaps the best summary of this excellent book is contained in the quotation from Francis Bacon, "It would be unsound and contradictory to expect that things which have never yet been done can be done except by means which have never yet been tried."

Reviewed by:

PETER WEINBERGER  
Lecturer in Human  
Relations

### Economic Planning

The Plans of Fourteen Countries with Analyses of the Plans. By Seymour Harris, Alfred A. Knopf, New York, 1949, \$6.00.

Once again Harvard Professor Harris appears in his now familiar duality of economic analyst and editor. In consequence, the present volume is to be regarded as comprising two major sections. First, there is the editor's summary, in abridged but adequate form, of the contemporary state of economic planning in fourteen countries ("accounting for about one-half of the world's population and three-quarters of the world's income"); and second, a general and relatively brief discussion of the economic and political problems which, seemingly, are endemic to planning.

Since the author has expressly (and successfully) disavowed any intention of writing a "learned discourse" on planning theory in the vein of, say, Lange or Landauer, professional economists will undoubtedly regard the first of the foregoing two sections as the relevant contribution of the work.

The question which now arises is, to whom, then, has Professor Harris addressed the speculative portion of the book and to what purpose? The answer seems clear enough: it is directed to the intelligent, American layman (a non-fiction, one fervently hopes) in order to bestir him an awareness of the very considerable growth and scope of planning in the world today and further to make him conscious of the nature of the difficulties inherent in the achieving of a society which offers *both* economic security and political liberty.

The implication of the above urging is unequivocal. The author writes, "In this quasi-war world, a planned society

may be just around the corner. Even in a peaceful world, the survival of a capitalistic society, an island in a socialist sea, is not probable. Capitalism may well be but a stage in the historical process from feudalism to socialism." In his view a planned economy, in greater or lesser degree, seems inevitable if not imminent for the United States.

Obviously, Professor Harris' remarks will hardly raise his popularity rating among many groups in this country. In this connection, the reaction of the nation's literate public to his book may very well be regarded as a sounding board of the change in status, if any, that the concept of economic planning has undergone during the past two decades and, by inference, a barometer of the public's present attitudes toward at least planning experimentation.

One last point: Assuming that planning is inevitable, does the author offer us any hope for the concomitant preservation of essential political liberties? He replies, "The world anxiously awaits the results of the British experiment." The honest ambiguity and uncertainty of this answer should, as perhaps nothing else, wake us to the necessity of some serious thinking of our own on this matter. It might be wise to remember that even if Professor Harris' forecast is in complete error, we should have added to our understanding of the world in which we live by a careful reading of his book.

Reviewed by:

WILLIAM F. TAUCHER  
Lecturer in Economics

### Briefer Guides From the Management Library

#### Clerical Salary Survey of Rates Paid in April, 1949

National Industrial Conference Board, New York, Studies in Labor Statistics, No. 2, 1949.

This report presents the tabulated results of the fifteenth of a series of clerical salary surveys conducted by the National Industrial Conference Board. It pertains to rates paid by 553 companies to 46,932 employees during April, 1949.

#### Aptitude Testing, Training, and Employee Development

American Management Association, New York, Personnel Series No. 128, 1949.

Includes: Greater efficiency through aptitude testing. Staffing and training for future management. Trends in the employment of minority groups.

Reviewed by:

BERNA M. CARLSON  
College Librarian



## REGIONAL REVIEWS

### The Columbia Empire

# Business is Good in Portland and 1950 Optimism Prevails

*Last quarter of 1949 took the curse off the first part of the year; compared with 1939, this area is in silver clouds of prosperity.*

**P**ORTLAND—There's a great deal of optimism prevailing in the Pacific Northwest following the end of 1949. The old year ended with scarcely a whimper about the outlook for 1950.

Agriculture, industry, retail sales, bank deposits and other indices of the Northwest's economy showed declines from 1948 except in a few instances—but these figures did not reflect the higher economic level of the last quarter of the year.

Compared with 10 years ago, 1949 was high in the clouds of prosperity and conditions, in most cases, are looking even better.

Portland was a "soft spot" among the nation's cities during most of 1949. Such is not now the case. Department store sales, below the national average during the first half of the year, came up during December to nearly equal 1948 volume and far exceeded the record of a year ago in physical volume of goods sold.

#### Lumber Industry

Lumbering and allied industries, which employ half of Oregon's industrial workers, went into a slide in August, 1948, and did not start to recover until August, 1949. Now the lumber market indicates good business for 1950.

The lumber market and the power shortage proved to be the main factors influencing Oregon's 1949 economic health. Lumber has recovered but three more years of power shortage remain.

#### Industrial Power

Despite the lack of large blocks of new power for industries desirous of building new plants in this area, industry spent \$11,000,000 for new Portland area plants and another \$4,500,000 for expansion. It was the smallest indus-

trial expansion since the war, but industrial leaders point out that new plants are limited temporarily to those that use little electrical energy. Vacant industrial sites are in demand.

Sites are being lined up for the expected industrial rush of 1953 when McNary Dam nears completion.

Proposed by President for the Northwest during the fiscal year 1951 is a \$204,800,000 water program for Oregon, Washington and Idaho.

Congress has been asked for \$53,500,000 for the Columbia Basin project, \$17,500,000 for Chief Joseph Dam, \$45,000,000 for McNary Dam and \$5,000,000 for Lucky Peak reservoir in Idaho.

Also highlighted in the program is a request for \$42,250,000 for the Bonneville power administration.

#### Employment Picture

Unemployment, which has been climbing steadily during recent months, is due for careful study during 1950. Oregon's employment offices reported 69,000 persons actively seeking work during the early part of January, the largest year-end figure since the war. A year ago unemployed persons numbered 59,600.

Most of the newly unemployed came from lumber and logging districts, where cold weather and snow caused curtailment of operations.

The rising influx of population, which is expected to give Portland a population of from 538,000 to 606,600 by 1960, also has contributed to the large number of jobless persons in the area.

There's a bright side to the picture, however, with the number of persons at work in Oregon totaling nearly 600,000.

Among current building projects in the area is the civil aeronautic administration's request of the Port of Portland to acquire, or commit itself to acquire, enough land for the projected 8,800-foot Portland airport runway to assure future construction of a full-length taxiway.

A letter from the CAA to the Port of Portland commissioners stated that formal approval of the initial runway project depends on "reasonably definite" assurance that the taxiway will be built.

#### Plywood Types And Industrial Uses

Plywood is graded on appearance of each face and grades are expressed by combination letters; thus, if end use calls for excellent appearance on the front face while appearance on the back face is less important, an A-D grade will probably be suitable.

There are two types of plywood with several appearance grades, within each type. The interior type is manufactured for use in which the product is not exposed to weathering and moisture. The exterior type, made with highly moisture-resisting glues, is specifically designed to withstand wetting and drying and suitable, therefore, for outside uses.

New and simplified specifications were recently compiled to cover plywood grades. These grades established on the basis of appearance of outside faces are designated by letters.

Grade A is the top grade with clear, smooth face, except for neatly made patches and a fine natural face providing excellent painting surface. This grade should be used only where appearance is most important. Grade B is next in appearance of face, Grade C third in order in appearance, and Grade D the least desirable.



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## REGIONAL REVIEWS

### The Wasatch Front

# Area Continues Steady Growth-- Moves Ahead Slowly But Surely

**Little business is discovered to be bigger than big business;  
Intermountain industrialists watch D & RGW with interest.**

**S**ALT LAKE CITY—Although some weak spots appeared in the Wasatch front industrial and business fabric during 1949, the year on the whole was one of steady but unspectacular growth.

The most distressed industry in the area as the year ended was nonferrous metal mining (other than copper). Underground lead-zinc-silver mines were either closed or struggling along on a partial operation. And the outlook for the new year was glum unless subsidy legislation or metal price increases come to the rescue.

#### Copper Mining

Copper mining was on the uptrend as the new year arrived, the Kennecott operations having returned to the 48 hour week after several months under a 40-hour week. And because of the fact that the Kennecott operations account for the large part of the non-ferrous metal production in this state (90 per cent or more) the economic effects of the distressed condition of the smaller mines is appreciably on the communities where they are located.

#### Steel Production

Steel production for the year showed a decline from the previous year of about nine per cent, the drop resulting from strike interruptions and the difficulties of getting a new hot coil rolling mill into operation at the Geneva Steel Co. plant.

The steel fabricating industry operated only slightly below the level of 1948 (a peak year) and the outlook for 1950 is good.

Coal production was off some ten per cent from 1948 but this was due to negotiating strategy of John L. Lewis and not to economic conditions.

Considered as one industry, manufacturing continued to expand during the year, reaching an all-time employment peak of 33,000 in September and employing an average of approximately 28,000 through the first nine months of the year.

#### Refinery Expansions

The industry which showed the most spectacular gain during the year was oil refining, up almost 65 per cent from the previous year. Additional expansions were scheduled for 1950. Standard Oil of California put its Salt Lake-to-Twin Falls pipeline into operation late in December and will extend it on to Pasco, Wash., by the autumn of 1950. A \$10,000,000 expansion program at its North Salt Lake refinery will get under way in March. Other oil refineries of the area have scheduled smaller expansions.

#### Farm Income

Farm income was down some ten per cent below 1948 but state tax collections, a good barometer of general economic conditions, were up six per cent. Another measure of industrial and business health—electric power consumption—likewise showed a gain. Total kilowatt sales of Utah Power & Light Co. were 9.5 per cent above last year, compared to a national increase of some 3.5 per cent. Industrial sales were up three per cent, compared to a three per cent decline nationally. And commercial sales were 10 per cent above the previous year, compared to a seven per cent rise nationally.

#### Business Survey

A survey of the state's business and industrial establishments by the Utah Department of Employment Security serves to reemphasize the fact that, collectively, little business is much bigger in this area than big business. The sur-

vey, made during the second quarter of 1949, showed that only eight firms employed 1,000 or more workers. The study did not show the number employed by this eight but together they would not account for more than about 15 per cent of the 124,678 employed by industry during that period. Sixteen firms employ between 500 and 999; 120 between 100 and 499; 194 between 50 and 99; 116 between 40 and 49; 169 between 30 and 39; 368 between 20 and 29; 382 between 15 and 19 and 695 between 10 and 14.

#### Smallest Are Most

At the extreme bottom of the size scale, 2,709 firms employ one worker; 1,833 firms employ two workers and 1,197 firms employ three workers.

The attempt of the Denver & Rio Grande Western railroad to pry open the Union Pacific's Ogden gateway to the Pacific Northwest is being watched with interest by intermountain manufacturers, distributors and produce shippers. The Rio Grande has presented its case to the Interstate Commerce Commission and the Union Pacific will present its case in March.

#### An Issue

Briefly, here is the issue posed by the complaint. The Union Pacific does not publish through rates with the Rio Grande for traffic moving into or out of Idaho and other Northwest territory through the Ogden gateway, where the two railroads connect. The Rio Grande, and its supporters, contend that this constitutes a discrimination against large numbers of shippers and the Rio Grande and that it violates national transportation policy, as set forth in the Interstate Commerce Act, and certain provisions of the Act.

The horde of witnesses who appeared in support of the Rio Grande fell into three main groups:

1. Produce shippers, who claimed their potential market areas were restricted by the fact that they could not reach certain southern and southwest markets under a joint through rate without running the risk of getting caught in "pocket" markets where they must either cut prices or pay combination local rates to get out.

2. Shippers of such products as lumber and fruits, who contended that lack of through rates with processing in transit privileges placed processing plants located on the Rio Grande at a competitive disadvantage with those located on the Union Pacific.

3. Distributors of various products whose territory embraces both Union Pacific and Rio Grande territory. They are unable to move "pool" cars from one area to the other for partial unloading without paying the combination local rates.

In cross examination of Rio Grande witnesses, the Union Pacific indicated that it would seek to justify its closed gateway on the grounds that there is nothing illegal about it; that it is entitled to the long haul traffic originating or terminating in the territory it exclusively serves; that it is simply doing what those who are seeking to open the gateway are doing—looking out after its own financial interests.

#### Western Wholesalers Increase Faster Than National Rate

There has been over twice as large a percentage of increase in number of wholesalers establishing headquarters in California in the last five years as the national rate of growth for the same period. According to U. S. Department of Commerce figures, two out of every three Western wholesale firms are located in California, and the Census Bureau estimates almost two-thirds of the total population of the West is in California.

As in the case of new business firms, every state in the West grew faster in new wholesale plants than the U. S. average.

Below is the percentage of gain by states in number of wholesale establishments in the West in the five years from 1944 to 1949:

| State               | Pct. Gain 1944-49 |
|---------------------|-------------------|
| Arizona .....       | 100               |
| Idaho .....         | 50                |
| Utah .....          | 60                |
| California .....    | 86                |
| Nevada .....        | 100               |
| Oregon .....        | 82                |
| Washington .....    | 76                |
| Total Far-West..... | 83                |
| U. S. Total.....    | 41                |



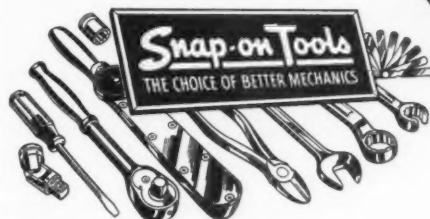
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## REGIONAL REVIEWS

### Continental Divide

# Secretary of Commerce Looks on Denver as Nation's Bright Spot

**Unusually favorable conditions found in region's employment, banking, construction, utilities. Political probabilities pondered.**

**D**ENVER—Bright spot of the nation, that's what the Rocky Mountain's economic picture looks like to Secretary of Commerce Sawyer after making a 15,000-mile trip across the country. The Secretary characterized as "unusually favorable conditions" those he found in the region's employment, banking, construction and utilities.

Finding non-ferrous metal mining looking very sick, he declared that the government ought to do something about it. This would sound like any Fair Dealer, but it happens to be the consensus of the industry, too, although there probably isn't one Fair Dealer in the whole shebang above the level of foreman.

The Secretary noted that declining livestock prices might hurt stockmen, although stockmen consider themselves in pretty good shape. The sheep industry is dying on the vine, but that doesn't seem to worry even the woolgrowers, who seem strangely content to undergo a process of gradual liquidation.

Tumbling prices for wool on the hoofs might be hard to explain in the face of drastically reduced supplies, which would seem to indicate that this one industry can't solve its problems by curtailing production.

Sheepherders, who used to be plentiful at \$50 a month and keep, have vanished and there aren't many takers of such jobs at \$150 a month plus keep. The process of mechanization has offset high labor costs in many fields, but nobody has figured out how to make one herder with a jeep do the work formerly done by three herders, though it might seem practicable.

Proof that 1950 will be its best year is seen in the swelling totals of construction work now well under way in

the Rocky Mountain region. Leading the parade, of course, is the \$70,000,000 spending program of the Bureau of Reclamation in just four states, as part of plans that will call for about two billion dollars during the next generation, in the Bureau's Region 7. During 1949 the U. S. Treasury received payments totaling \$1,760,000 for sale of 270 million kilowatt-hours of electricity from its hydro projects in Region 7, so it isn't all out-go, not quite.

#### Construction Soars

A breakdown of the 1950 budget of \$70,000,000 shows that dams and reservoirs will get 30 millions, pumping plants a million, canals and laterals ten millions, power plants five millions, transmission lines nine millions, electric substations three millions, railroad and highways two millions, tunnels five millions, housing and miscellaneous two millions and another two millions for surveys and designs.

#### Piping Power, Literally

At this writing a transmission line carrying 69,000 volts is being run through the 13-mile Alva B. Adams tunnel in Colorado from Grand Lake on the Colorado River to Estes Park on the Big Thompson branch of the South Platte which is part of the Missouri-Mississippi drainage system. The power will move the opposite direction from the water in the tunnel, since the power is to be generated on the eastern slope and will be rushed through the big tunnel to run pumping stations on the western slope where the water is lifted into Grand Lake from Granby Reservoir.

The Bureau of Reclamation wanted to run the power line up and over the Continental Divide but conservationists screamed that the towers would mar

the scenery in Rocky Mountain National Park. As it turned out, the underground cable job cost \$986,000 whereas the overhead system's lowest bid was \$1,483,782.

Incidentally, the engineers really had to do some sweating to work out a safe way to run that power line through the underground river without letting the wires get wet. The solution was to use a tightly-sealed pipe filled with inert nitrogen gas which will keep the three heavily-insulated copper cables dry. The nitrogen won't burn nor support combustion, reducing danger of a short-circuit to a minimum. There is no water in the tunnel yet, and the half-mile lengths of five and one-quarter inch conduit pipe are being bolted to the roof, after the joints are welded. Contractors on this unusual job are Electrical Constructors, Inc., of Chula Vista, California.

The Bureau expects its operating and maintenance problems with the underwater line to be considerably greater than if the overhead line would have been built, but this may not be true. Keeping an overhead high-tension line working in the arctic weather of the Continental Divide isn't any cinch, either, as the Public Service Company of Colorado or the Montana Power Company might testify with a sob.

A nice touch of sentiment was displayed the other day when the 977 employees of Merchants Biscuit Company solemnly witnessed ceremonies marking the change of name of the company to Bowman Biscuit Company. The change was in tribute to the memory of Clinton A. Bowman, founder of the Merchants Biscuit Company, which has been for some years a division of United Biscuit Co. of America. Square-jawed "young Clint" Bowman runs the company now

*(Continued on page 76)*



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## DENVER REVIEW

(Continued from page 74)

and has announced there will be no change in management, personnel or policies—just a belated honor for one of the finest men who helped to make industry in the West what it is today.

### Political Straws

With an election year on hand, businessmen are sizing up the prospects and wondering what next fall's elections may accomplish, if anything. Republicans aren't happy about the prospect, especially the admittedly slim chances of re-electing Colorado's U. S. Senator, Eugene D. Millikan. The Denver attorney has risen to top rank in the Senate and is rated among the half-dozen most valuable men in his party, but he has never done much electioneering and his chances of losing out to some far less able Democrat are more than considerable.

However, some strange goings-on seem likely to remove the chances of Millikan's opponent being Governor Lee Knous, who could beat him easily. If Knous has been given the Federal judgeship that has been dangling tantalizingly in front of his face for the past six months, Millikan may be saved. The Republicans could have the Colorado Governorship, if an able man were put up, but there don't seem to be any seasoned and able people who want that job on either side of the political fence. Several other states in the Rocky Mountain area present a similar spectacle—nobody likes the way the people's business is run, but nobody of much stature wants to tackle the job.

### Peering Ahead

With half the century gone, everybody has been speculating on the changes that will come about during the next fifty years. What will be the nature of things in the Rocky Mountain region when the year 2,000 is rung in? Anybody can hazard some guesses, and here are some from a reporter who has lived in the area during most of the first half of the century, and has learned something of the changes that may lie ahead.

Television will mark the greatest single change, although it will be considered a novelty the first few years as was the automobile and the telephone. The changes wrought by television will be felt most drastically in politics and merchandising, but education, music, sports and other cultural and recreational fields will be revolutionized once the new medium of communication is thoroughly established in all parts of the country, which will be achieved before 1960. The change in the third

quarter due to television will be incredibly greater than those wrought by widespread use of the radio during the second quarter of the century.

Power will undergo many transformations during the half-century. Broadcast power, experimented with by Thomas D. Campbell to run tractors on his Montana wheat farm shortly after World War I, will be used extensively but in relatively short radius, as in a city or industrial district. Motors generally, even in homes, will pick up their power without need of wires.

There will be many atomic-powered plants, but hydrocarbons from oil, shale and natural gas will be utilized for most installations. Use of hydrocarbons such as oil or coal for space heating will have been forgotten, since unit electric heaters will take over that field as central heating systems disappear.

Rocky Mountain region beauty spots, like those on the Riviera and at Rio de Janeiro, will be overrun with pleasure-seekers and vacationists from all over the world. Instead of complicated motors, transmissions, and all the other units in automobiles, the motorist will find packaged units at the service shop ready for quick and service-free installation. The motor will contain its own charge of fuel and will be disposed of when the fuel is exhausted, like tossing away wornout flashlight batteries. Life, in short, will be just a breeze, by 2,000 A. D., particularly for those who live in the cool, beautiful Rockies.

#### Chemicals in Colorado

An informative article on Colorado chemical and allied industries appeared in *Chemical and Engineering News*, October 17, 1949, written by Rolfe Rand, executive director of the Colorado Resources Development Council, Inc. The story covers the development of many of the state's principal industries and such leading manufacturers as the Colorado Fuel & Iron Corp., Gates Rubber Company, Coors Porcelain Co., Climax Molybdenum Company, and many smaller enterprises. Reprints are available from the CRDC office, 522 Kittredge Bldg., Denver 2, Colo.

#### Western Aluminum Industry Is Big

Since 1946, the year in which Kaiser entered the aluminum business, more than 775,000,000 pounds of aluminum have been produced; over 273,000 tons of refractory materials; and over 1,000,000 tons of industrial chemicals. The value of goods and services produced amounts to over \$200,000,000.

During 1949, the firm produced 250,000,000 pounds of primary aluminum, and production steadily increases.



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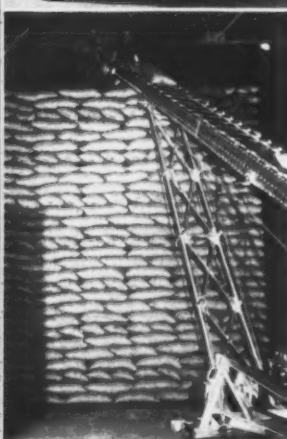
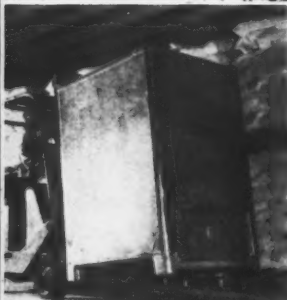
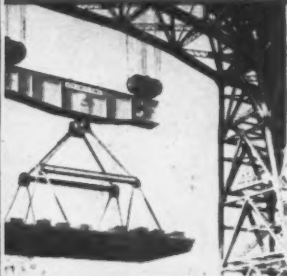
**EDERER  
ENGINEERING  
COMPANY**

2931 FIRST AVENUE SOUTH  
SEATTLE 4, WASHINGTON



# WESTERN INDUSTRY

## MATERIALS and FREIGHT HANDLING Theme of Our May, 1950 issue



The phenomenal growth of industry in the West is well known—but have you thought how much more important is the handling of materials to a rapidly growing industry, than to more static establishments? In 14 of the Nation's 16 major industries, the growth of industry in the West exceeded the national average (by 20% to 66% in 8 of the 14), according to U. S. Dept. of Commerce. That's why it will pay you to tell your story in our May MATERIALS and FREIGHT HANDLING issue.

### ARTICLES WILL HELP BOTH READERS AND ADVERTISERS

Like all WESTERN INDUSTRY issues, the editorial material in this May Number will provide brass-tack "why" and "how" information aimed to help your prospects solve their materials and freight handling problems. In our 1949 MATERIALS HANDLING issue we carried 13 articles on this subject. To give you some idea of the phases included, here are 5 of the 13 titles:

1. "High Speed Towing by the Sub-floor Method"
2. "Standards for Judging Whether Palletizing Will Pay Out"
3. "System Cuts Package Handling Costs from 8.4¢ to 1.8¢"
4. "Take an Overall View of Your Materials Handling Problem"
5. "Tramrail Effects Savings in Repair and Service Shop"

1950 will be a repeat performance so far as thorough coverage is concerned, and you know that such articles, well prepared, naturally earn high readership and provide an interested, ready-made audience for your advertising.

**LATE BULLETIN:** Chet Huntley, nationally known CBS NEWS COMMENTATOR devoted his entire 15 minute broadcast (5:30 to 5:45 P.M. PST) on January 17, to a summary and analysis of the January Annual Review and Forecast issue of WESTERN INDUSTRY—proof of WESTERN INDUSTRY's editorial recognition and acceptance.

### WHAT OUR READERS SAY...

"You ran an article on our New Dual Newsprint Handling Device. The effect of this article was outstanding. Inquiries from Italy, England, Canada, and numerous eastern cities have been received. Furthermore, each day brings more correspondence from cities throughout the country and Canada."

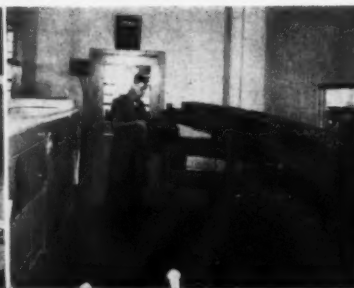
"The article in your magazine regarding 'Disposable Paper Pallets Save Time, Money and Goods' has come to my attention. I wish . . . to obtain five reprints . . ."

"We would greatly appreciate receiving, if possible, 3 copies of the May issue of *Western Industry* . . . containing a story entitled 'Will Long Distance Conveyors Supersede Rail Hauling?'"

"Thank you very much for sending me the tear sheets of the article you printed in your May issue on Sherwood Swan's conveyor system. This particular installation has been of great interest to us, and we appreciate learning more about it through your editorial presentation."

"The May 1949, issue of *Western Industry* contains an interesting article on palletized operations at the Oakland Naval Supply Center. I should like to inquire whether *Western Industry* would have any objection to our photographing the chart on page 51 for distribution to some of our local unions."

The materials-handling articles in the May, 1950 issue will be even better, we think, than those that evoked these comments.





# CARRY YOUR SALES GOSPEL TO OVER 9,000\* ACTIVE BUYING FACTORS

WESTERN INDUSTRY's effective circulation, as of January, 1950, passed the 9,000\* mark. By effective circulation, we mean 9,000 copies mailed to those who actively manage and do the buying, specifying and approving of purchases in Western plants. To reach these 9,000 buyers reserve space for your sales message in our May MATERIALS and FREIGHT HANDLING number TODAY. First forms close April 5th; final forms with complete plates, April 12th.

\*There's no padding in this 9,000. It does not contain copies to advertisers, agencies, exchanges, samples, or advertising prospects.

## NO INCREASE IN RATES

You pay no premium for this special, extra-interest-packed May issue. Our regular rates apply . . .

## Out April 25—Final Forms Close April 12

Take advantage of the May MATERIALS and FREIGHT HANDLING number NOW. Wire or mail your space reservation TODAY, stating ad size and whether color or bleed. Final forms close April 12. If further extension is necessary, wire or air mail us before that date.

### ADVERTISING RATES

(Based On Total Bulk Space Used in 12 Months)

| Full Page Space  |           |                |                   |
|--|-----------|----------------|-------------------|
| 24 pages or more   |           |                | \$185.00 per page |
| 12 to 23 pages   |           |                | 200.00 per page   |
| 6 to 11 pages  |           |                | 225.00 per page   |
| 3 to 5 pages   |           |                | 240.00 per page   |
| Less than 3 pages  |           |                | 255.00 per page   |
| Fractional Space   |           |                |                   |
|  | 1 time    | 6 time         | 12 time           |
| 2/3 page   | \$170.00  | \$160.00       | \$150.00          |
| 1/2 page   | 127.50    | 120.00         | 112.50            |
| 1/3 page   | 85.00     | 85.00          | 80.00             |
| 1/4 page   | 63.75     | 61.75          | 60.00             |
| 1/6 page   | 42.50     | 42.50          | 42.50             |
| 1/8 page   | 31.88     | 31.88          | 31.88             |
| Color Charges  |           |                |                   |
|  | 1 page    | 2 pages facing |                   |
| Red, orange or yellow  | \$55.00   | \$80.00        |                   |
| Other colors   | 65.00     | 90.00          |                   |
| Metallic colors  | 70.00     | 95.00          |                   |
| Bleed Borders  |           |                |                   |
| Bleed top, bottom or outside   | 20% extra | 15% extra      |                   |
| Gutter bleed   | No charge | No charge      |                   |
| Inserts  |           |                |                   |
| Inserts billed at earned black and white page rate. No extra charge for backup either single leaf or spread (4-page form). |           |                |                   |
| Composition—No charge.   |           |                |                   |
| Preferred Positions (Non-cancellable).   |           |                |                   |
| Page facing second cover   |           | 10% premium    |                   |
| Page facing contents page  |           | 20% premium    |                   |
| Page facing first editorial  |           | 20% premium    |                   |
| Page facing first reading  |           | 20% premium    |                   |
| Any guaranteed regular position (other than preferred)   |           | 10% premium    |                   |

NOTE: Island 1/2-page positions (4 1/2" x 7 1/2") cost 20% extra.

Write for availability of cover positions and rates.

### MECHANICAL REQUIREMENTS

Space May Be Used in Any of the Following Forms:

|                             |                                  |
|-----------------------------|----------------------------------|
| Bleed full page (trim size) | 8 1/4 in. wide x 11 1/4 in. deep |
| Requires a plate size of    | 8 3/4 in. wide x 11 1/2 in. deep |
| Standard full page          | 7 in. wide x 10 in. deep         |
| Two-thirds page             | 4 1/2 in. wide x 10 in. deep     |
| Half page                   | 7 in. wide x 4 1/2 in. deep      |
| or                          | 3 1/2 in. wide x 10 in. deep     |
| Third page                  | 4 1/2 in. wide x 7 1/2 in. deep  |
| or                          | 2 1/4 in. wide x 10 in. deep     |
| Quarter page                | 4 1/2 in. wide x 5 in. deep      |
| or                          | 7 in. wide x 2 1/2 in. deep      |
| Sixth page                  | 3 1/2 in. wide x 4 1/2 in. deep  |
| or                          | 4 1/2 in. wide x 3 1/2 in. deep  |
| Eighth page                 | 2 1/4 in. wide x 4 1/2 in. deep  |
| or                          | 7 in. wide x 1 1/2 in. deep      |
|                             | 3 1/2 in. wide x 2 1/2 in. deep  |

#### Inserts

Should be shipped untrimmed measuring 8 3/4" by 12" to trim to magazine size 8 1/4" by 11 1/4", allowing 3/8" for gutter bleed. If backup required, ship to us c/o Ben Franklin Press, Inc., 500 Sansome Street, San Francisco 11. If no backup required, ship to c/o William S. Millerick Co., 545 Sansome Street, San Francisco 11. Stock preferably not heavier than our cover stock.

#### Half-tone Screens

110- or 120-line preferred.

#### Closing Dates

First forms close on 5th of month preceding issue date, final forms on the 12th preceding issue date.

#### Plates

Plates should be shipped mounted, and with proper mortise. All plates not called for in 14 months will be destroyed.

Classified Advertising \$8.50 per column inch.

## WESTERN INDUSTRY

609 MISSION ST.  
SAN FRANCISCO 5  
CALIFORNIA  
YUkon 2-4343

NEW YORK—Franklin B. Lyons, Mgr.  
Western Road, Georgetown, Conn.  
Telephone Georgetown 374

CLEVELAND—Richard C. Burns, Mgr.  
7708 Deerfield Drive, Cleveland 29, Ohio  
Telephone Tuxedo 5-1848

CHICAGO—A. C. Peterson, Mgr.  
3423 Prairie Ave., Brookfield, Ill.  
Telephone Brookfield 532

SAN FRANCISCO—R. C. Williams, Mgr.  
609 Mission St., San Francisco 5, Calif.  
Telephone YUkon 2-4343

LOS ANGELES—Clarence G. Beardslee, Mgr.  
3757 Wilshire Blvd., Los Angeles 5, Calif.  
Telephone DUNKirk 4-9462

New Market & Media  
Data Units Available.  
Send for a copy NOW.

## CASH IN ON THIS MARKET NOW!

### Western Industry: Yes, I want

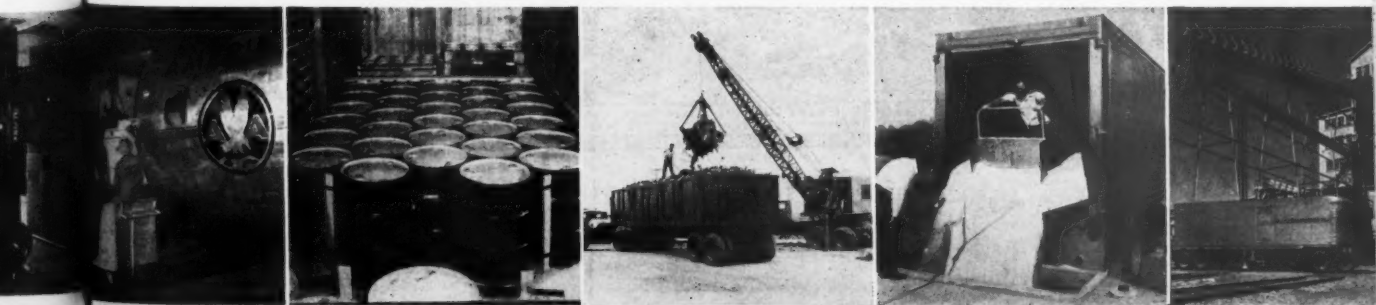
- ☐ 1949 Materials Handling Issue
- ☐ 1950 Annual Review and Forecast
- ☐ Additional information and your District Manager to arrange an appointment with me.

NAME..... TITLE.....

COMPANY.....

STREET.....

CITY..... ZONE..... STATE.....



# Industrial Communication Study Seeks to Cure Labor Problems

**I**F YOUR personnel turnover is high . . . if management and labor can't seem to get along . . . or if workers don't seem to be producing as much as they logically should—then look to your "communication," for the heart of the trouble may be there.

That's the theory behind a course in "Industrial Communication" offered by the University of Denver School of Speech which is under the direction of Dr. Elwood Murray.

It's the well-founded contention of Ernest Miller, coordinator of the course, that many so-called "human" difficul-

ties which reduce business profits, stem from a lack of understanding among the persons concerned. Hence, the Industrial Communication course is designed to teach persons in business—from both management and labor—to understand each other.

And the techniques are successful, too. Scores of workers, supervisors, and administrators from a variety of industries in the vicinity served by the University of Denver have completed the course.

In numerous instances they have returned to their plants and offices and made surprising strides in improved

management-labor relations, and in production increases where the previous decrease was due to human personality factors.

Among other things, graduates have become frequent speakers to various groups in the community . . . have become teachers (in addition to their regular jobs) . . . have shown marked improvement in their human relations and their ability to get along with others.

Thus, the course tends to benefit its graduates both directly through resultant promotions, pay raises and increased prestige, and also in less obvious ways through improved personal relations.

This Industrial Communication program requires two meetings a week for a year. Six areas of communication are investigated. Problems from the work of students in the classes are discussed in connection with each area. In this way, the course is made as practical as possible, and students are able to bring their own difficulties to class for possible solution.

## Six Areas Are Covered

Following is a discussion of each of the six areas covered during the course:

*Communication and Management.* This section deals with methods of improving morale and increasing production and efficiency through improved communications. Channels of communication in business and industry are dealt with, along with methods of keeping these channels clear and avoiding communication blockages.

*Communication and Personal Adjustment.* Within this section, techniques are taught which enable the individual to adjust to his business associates, employers, and employees with maximum effectiveness. Stress is laid on methods of administering individual tests such as personality, intelligence, and other standard tests.

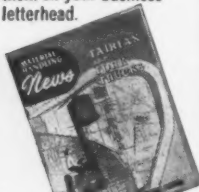
*Communication and Group Adjustment.* Here, techniques for understanding, motivating and measuring group action are taught. Stress is laid on the techniques of predicting group action,

**\*CONQUER** those Handling Costs!  
... as the quickest, surest way to bring down  
unreasonably high production **COSTS!**

To find and realize *your* opportunities for  
big savings in this incomparably rich field,

**\*CONSULT** the leading producer of  
modern handling methods and machines . . .

How leading businesses are conquering costs—with quick and substantial profits—is described and illustrated in Material Handling News and in Clark's invaluable motion pictures. You can enjoy the benefits of both by requesting them on your business letterhead.



**CLARK**

**CLARK** ELECTRIC AND GAS POWERED  
FORK TRUCKS  
AND INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 28 MICH.  
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD  
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

**OXYGEN**  
**ACETYLENE**  
**HYDROGEN**  
**NITROGEN**  
**WELDING**  
**EQUIPMENT**  
**& SUPPLIES**

**Stuart Oxygen Co.**  
SAN FRANCISCO • OAKLAND • LOS ANGELES

This is a fast-moving  
efficient organization  
of competent people,  
always ready and able  
to serve you well.

as this field applies specifically to the field of business and industry.

*Communications and Public Relations and Selling.* Theory behind this section of the program is that when communication is improved, then in general sales techniques, public relations techniques, etc., will also tend to be improved.

Emphasis is placed on techniques for making clear publicity releases, sales presentations, discussions, speeches, radio broadcasts, and similar materials.

*Evaluating Communication.* This section stresses methods of determining the effectiveness of communications. Techniques of measuring, rating, scaling, and evaluating group understanding and group morale are dealt with.

*Seminar on Communications Problems.* In this final session, techniques learned by the group during the previous five sections are integrated. Individual, specific problems are dealt with.

Students are invited to bring their most difficult communication-based business problems to the seminar for solution. The group is set up to produce actual Town Hall Forum-type radio broadcasts on business issues of importance to the Rocky Mountain region and to the nation.

When a student has completed the course, he has learned a variety of techniques which will enable him to adjust better to the business world.

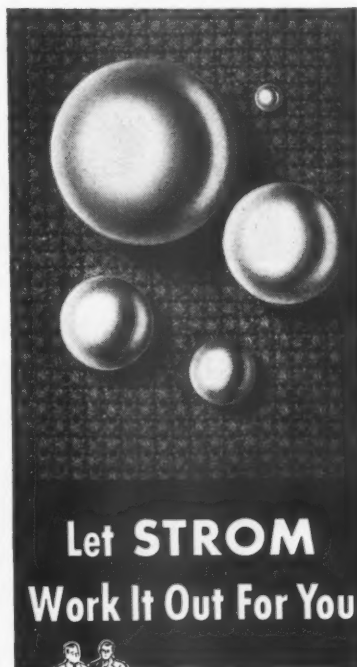
He has learned how to make himself better understood—to realize when he may not have been understood sufficiently clearly. He has learned to be a more effective person both as an individual and when working with groups of others. He has developed an awareness of the need for good communication and a desire to communicate better.

He has learned many things which will make him a better employer—or a better employee—a far more effective human being.

#### **Training for Plutonium Production**

A student training program of nine to 16 months is being offered to recent science and engineering graduates, at the Hanford Works near Richland, Washington. Dr. Winton I. Patnode, in charge of technical and educational phases of General Electric's Nucleonics Department (which operates Hanford for the AEC) is in the San Francisco Bay Area to interview graduating students in the fields of chemistry, chemical engineering, physics, metallurgy, and biology.

## **a metal ball PROBLEM?**



Let **STROM**  
Work It Out For You



Whether it is a precision ball bearing or one of the other many ball applications in industry, your problem will not be entirely new. Strom has been in on many ball problems and knows the importance of the right ball for the job.

Strom has been making precision metal balls for over 25 years for all industry and can be a big help to you in selecting the right ball for any of your requirements. In size and spherical accuracy, perfection of surface, uniformity, and dependable physical quality, there's not a better ball made.

Pacific Coast Representative:

**HAROLD R. SWANTON, INC.**

1706 So. Grand Ave., Los Angeles 15, Calif.

**Strom**  
**STEEL BALL CO.**  
1850 So. 54th Ave., Cicero 50, Ill.

Largest Independent and Exclusive  
Metal Ball Manufacturer



# APPLETON DISKONECT REFLECTORS *the most practical* DETACHABLE REFLECTORS *ever made!*

## 5 SIMPLE STEPS FOR EASIER SERVICING



Release spring-set lever. Reflector and lamp are detached.



Slight upward pressure and a quarter turn remove lamp and socket from reflector.



Reflector may be immersed in water for thorough cleaning.



Twist of wrist securely locks lamp and socket to reflector.



Pressing reflector into hood, locks reflector into place.



Here's Appleton's answer to the ever-present problem of installing and servicing light reflectors quickly and easily. The Diskonect Reflector is attached or detached from the hood instantly by means of a snap lock—without twisting, tugging, forcing or the use of tools. The heavy drawn-steel hood is fitted with a spring-set lever which locks or unlocks the porcelain enameled reflector.

Diskonect Reflectors are finished in permanent porcelain enamel and offered in a wide variety of styles. Complete "come-apart" construction permits cleansing of all parts separately, a time-saving feature that enables you to maintain a higher standard of lighting efficiency.

Sold Through Electrical Wholesalers

**APPLETON ELECTRIC COMPANY**

1740 WELLINGTON AVENUE • CHICAGO 13, ILLINOIS

Branch Offices and Resident Representatives in All Principal Markets

### USE THIS CONVENIENT BUYING GUIDE

A fully detailed and graphically illustrated Appleton Catalog will be mailed to you immediately upon request. Be sure to have one and use it for faster, easier—completely dependable purchasing of all lighting and electrical equipment.



## Take Time Out But Keep Machines Producing

OF ALL the problems that beset industry, there is one in particular that recurs with diurnal frequency, to the consternation of management. That is the problem of keeping the wheels of progress well lubricated and rolling at the stage of production, while the workers take their periods of relief.

Haphazard attempts at solution of this situation may be costly. Methods of solving this problem are probably as numerous and diversified as the businesses that employ them.

Some firms shut down operations and take "time off," thereby halting production. Others, like Pope & Talbot, Inc., have developed a highly workable and profitable plan that goes like this:

"Our relief procedure hinges on the fact that we endeavor to break a man in for the next higher job in addition to his assigned duties. In that way," says H. J. Olsen, superintendent of the St. Helens, Oregon, plant, "we can rotate the men about as the workers around them are taking their morning and afternoon 10-minute relief period. For instance, on our Head Rig or Band Saw and Edger operation, the men are broken in on the various jobs so that they are all able to get their break period. To fill in for the men who are gone we substitute our upstairs clean-up man and our slasher. They are able to leave their duties for a short time at various intervals without hindering the overall production.

"Our remanufacturing plant relief procedure is operated in a similar manner with the men broken in for the adjacent jobs. Supplementing them are the upstairs clean-up man who is capable of performing several jobs and the downstairs clean-up man who relieves the strip hog feeder while he is relieving other men.

"The use of these men entails no extra cost to us, since they can be absent from their duties at intervals without upsetting our operation. In addition to the advantages afforded the management insofar as economy and production standards are concerned it is equally advantageous to our employees, as it gives them the opportunity to learn the more skilled and higher-paid positions, and when vacancies occur they are qualified to move up and 'take over' due to their past experience.

"We also find that it avoids confusion in the event of sickness or accident as efficient replacements are always on hand."



## Some Additional Western Markets (omitted from January issue for lack of space)

(Figures from 1947 U. S. Census of Manufactures. Money figures in thousands of dollars.)

|   | Total number of establishments | All Employees Number (average for year) | Product'n Workers Number (average for 1947) | Value added by manufacture | Expenditures for new plant & equipment |
|---|--------------------------------|---|---|----------------------------|--|
| <b>Textile Mill Products</b>                        |                                |   |   |                            |  |
| Colorado .....                                      | 4                              | 116                                     | 100   | \$363                      | \$19                                   |
| Washington ....                                     | 14                             | 573                                     | 509   | \$2,649                    | \$59                                   |
| Oregon .....  | 22                             | 3,066                                   | 2,631                                       | 12,825                     | 860                                    |
| California .....                                    | 146                            | 5,458                                   | 4,688                                       | 33,083                     | 3,136                                  |
| Total Pacific....                                   | 182                            | 9,097                                   | 7,828                                       | 48,557                     | 4,055                                  |
| Total Western ..                                    | 186                            | 9,213                                   | 7,928                                       | 48,920                     | 4,074                                  |
| <b>Woolen and Worsted Manufactures</b>              |                                |   |   |                            |  |
| Oregon .....  | 10                             | 1,555                                   | 1,434                                       | \$7,407                    | \$257                                  |
| California .....                                    | 8                              | 394                                     | 363   | 1,664                      | 45                                     |
| Total Pacific ...                                   | 18                             | 1,949                                   | 1,797                                       | 9,071                      | 302                                    |
| <b>Full-Fashioned Hosiery Mills</b>                 |                                |   |   |                            |  |
| California .....                                    | 6                              | 440                                     | 386   | \$2,086                    | \$421                                  |
| <b>Knit Outerwear Mills</b>                         |                                |   |   |                            |  |
| California .....                                    | 57                             | 1,096                                   | 929   | \$6,909                    | \$135                                  |
| <b>Finishing Textiles, Except Wool</b>              |                                |   |   |                            |  |
| California .....                                    | 17                             | 548                                     | 474   | \$2,581                    | * *                                    |
| <b>Miscellaneous Fabricated Textiles</b>            |                                |   |   |                            |  |
| Colorado .....                                      | 20                             | 386                                     | 328   | \$1,295                    | \$32                                   |
| Washington ....                                     | 39                             | 637                                     | 546   | 2,600                      | 106                                    |
| Oregon .....  | 17                             | 463                                     | 393   | 2,001                      | 32                                     |
| California .....                                    | 352                            | 5,275                                   | 4,633                                       | 24,754                     | 1,074                                  |
| Total Pacific....                                   | 408                            | 6,375                                   | 5,572                                       | 29,355                     | 1,212                                  |
| Total Western ..                                    | 428                            | 6,761                                   | 5,900                                       | 30,650                     | 1,244                                  |
| <b>Cordage and Twine</b>                            |                                |   |   |                            |  |
| California .....                                    | 6                              | 590                                     | 509   | \$3,530                    | \$363                                  |
| <b>Plastics Products (not elsewhere classified)</b> |                                |   |   |                            |  |
| Colorado .....                                      | 10                             | 124                                     | 109   | \$261                      | * *                                    |
| California .....                                    | 159                            | 2,721                                   | 2,267                                       | \$13,815                   | \$1,405                                |
| Total Western ..                                    | 169                            | 2,845                                   | 2,376                                       | 14,076                     | 1,405                                  |

\* \* Withheld to avoid disclosing figures for individual companies.

|   | Total number of establishments | All Employees Number (average for year) | Product'n Workers Number (average for 1947) | Value added by manufacture | Expenditures for new plant & equipment |
|---|--------------------------------|---|---|----------------------------|--|
| <b>Apparel and Related Products</b>       |                                |   |   |                            |  |
| Montana .....                             | 1                              | * *                                     | * *   | * *                        | * *                                    |
| Idaho .....                               | 4                              | 29                                      | * *   | * *                        | * *                                    |
| Colorado .....                            | 45                             | 1,632                                   | 1,426                                       | \$5,234                    | \$87                                   |
| New Mexico....                            | 14                             | 295                                     | 258   | 648                        | 25                                     |
| Arizona .....                             | 14                             | 67                                      | 65  | 271                        | 1                                      |
| Utah .....                                | 33                             | 1,179                                   | 1,097                                       | 3,433                      | 82                                     |
| Nevada .....                              | 2                              | * *                                     | * *   | * *                        | * *                                    |
| Total Mtn. ....                           | 113                            | 3,202                                   | 2,846                                       | 9,586                      | 195                                    |
| Washington ....                           | 107                            | 2,778                                   | 2,446                                       | 10,583                     | 365                                    |
| Oregon .....                              | 42                             | 1,883                                   | 1,636                                       | 7,893                      | 117                                    |
| California .....                          | 1,687                          | 43,144                                  | 38,655                                      | 188,294                    | 5,780                                  |
| Total Pacific....                         | 1,836                          | 47,805                                  | 42,737                                      | 206,770                    | 6,262                                  |
| Total Western ..                          | 1,949                          | 51,007                                  | 45,583                                      | 216,356                    | 6,457                                  |
| <b>Brooms and Brushes</b>                 |                                |   |   |                            |  |
| California .....                          | 35                             | 459                                     | 386   | \$2,134                    | \$162                                  |
| <b>Morticians' Goods</b>                  |                                |   |   |                            |  |
| California .....                          | 41                             | 740                                     | 629   | \$4,074                    | \$187                                  |
| <b>Signs and Advertising Displays</b>     |                                |   |   |                            |  |
| Colorado .....                            | 21                             | 250                                     | 201   | \$1,219                    | \$30                                   |
| Utah .....                                | 11                             | 148                                     | 127   | 712                        | 14                                     |
| Total Mtn. ....                           | 32                             | 398                                     | 328   | 1,931                      | 44                                     |
| Washington ....                           | 37                             | 336                                     | 267   | 1,627                      | 84                                     |
| Oregon .....                              | 24                             | 298                                     | 236   | 1,471                      | 42                                     |
| California .....                          | 197                            | 2,285                                   | 1,862                                       | 11,167                     | 1,032                                  |
| Total Pacific....                         | 258                            | 2,919                                   | 2,365                                       | 14,265                     | 1,158                                  |
| Total Western ..                          | 290                            | 3,317                                   | 2,697                                       | 16,196                     | 1,314                                  |
| <b>Models and Patterns (except paper)</b> |                                |   |   |                            |  |
| California .....                          | 23                             | 174                                     | 197   | \$839                      | \$7                                    |

\* \* Withheld to avoid disclosing figures for individual companies.

## NO SPRINGS TO BREAK in the *Nutting* JACK it's ALWAYS Dependable

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two Nutting Jacks and twelve semi-live skids. That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. The jack may be coupled to one skid, then quickly uncoupled and coupled to another.

SEND FOR BULLETIN 48-JS. See your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. You'll get all the facts on the Nutting Jack-Skid system.

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February, 1950—WESTERN INDUSTRY



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# THE WEST ON ITS WAY

## ALASKA

**ALASKA'S TRADE BOOMING**—Alaska's total trade with the United States has nearly reached a total of \$5,000,000,000 and it is understood that figure will be increased approximately \$250,000,000 a year.

## ARIZONA

**FIRST CEMENT PLANT IN OPERATION** — The only cement plant located in Arizona, the \$3,000,000 Arizona Portland Cement Company plant at Rillito, made its first shipment last month. It has a capacity of approximately 2,000 barrels of cement a day. The plant employs nearly 100 men as operating personnel. All cement used in Arizona previous to this time was shipped from California.

**BENSON BRIKRETE IN PRODUCTION**—2,000 bricks a day are being manufactured in this community by B. R. Button and C. E. Morrison and their families. Their machine, operated on franchise from the Brikrete Association, has been in operation approximately a year.

**REYNOLDS ALUMINUM BUYS EXTRUSION PLANT** — An aluminum extrusion plant at Phoenix is sold to Reynolds Aluminum Company for \$6,000,000. This is the fifth aluminum facility sold to Reynolds within one week, and the largest extrusion plant in the United States.

**NEW PROVING GROUND STRUCTURES**—Three new structures are in process of construction for U. S. Government at White Sands, N. M., proving ground for guided missiles. Womack Construction Company has been awarded the contract.

**RESEARCH LABORATORY UNDER CONSTRUCTION**—Motorola, Inc., has begun construction in Phoenix of a research laboratory and specialized production building, supplementing an electronic research lab the Chicago firm has operated there since early last year. About 150 electronic engineers and other personnel will be employed to produce specialized electronic and radio equipment.

**AIRPORT CONSTRUCTION**—Still to be built as part of Phoenix municipal airport's \$6,000,000 development program, is a 6,000-foot air strip and a multi-million dollar administration building.

## CALIFORNIA

**NEW AIRLINES COMMUNICATION**—A firm named Air Radio, Inc. (code ARINC), has started operation on the Pacific Coast to take over airlines radio communication, by code operation. It was originally formed to negotiate frequency contracts, but subsequent developments indicate that this firm can handle such communications at about a 25 per cent cost reduction. Chuck Fitch is station manager at Mills Field, San Francisco; other West Coast offices are at Los Angeles and Seattle, so far. Home office is at 1108—16th St. N.W., Washington 6, D.C. John Durkovic is secretary.

**NEW PAINT PLANT** at Torrance, costing about \$1,250,000 is being built for Pittsburgh Plate Glass Co., and scheduled to go into operation within a year. A complete line of the firm's house, industrial, and automobile paints will be produced.

**REFRIGERATION FIRM** starts up in Stockton: Kelvard Refrigeration Co., 605 W. Fremont, owned by R. A. Brand. They will build units for national firms, and rebuild units to factory specs on a production line basis.

**FROZEN FOODS DEAL**—Ferguson Frozen Foods branch in Modesto is bought by Duke LeBaron, of the Ferguson firm in Oakland, who has resigned from that firm. Newly purchased operation is now known as LeBaron Frozen Foods. P. J. Wegesser succeeds LeBaron with Ferguson Co.

**STEEL DEAL**—Lynch Shipbuilding Co. is absorbed by National Steel & Shipbuilding Co., San Diego, and it will be integrated into parent firm's facilities as an expansion move.

**UNION SUGAR EXPANDS** \$500,000 worth at Betteravia, to complete a \$1,000,000 modernizing program. This move will assure the firm of a daily slicing capacity of 2,800 tons of sugar beets. Program is projected over 1950-51.

**S.P. FREIGHT EXPANSION** plans call for 3100 new freight cars and a general overhauling on 900 box cars.

**P-I-E WANTS KEESHIN LINES** \$1,940,000 worth, which is the amount offered for the Chicago firm. That deal would give P-I-E an integral coast-to-coast operation.

**GEN PETE MODERNIZES** its Islais Creek storage terminal, San Francisco, spending about \$200,000 in the process. That includes replacing 28,000 barrel capacity tanks with new tanks of 17,000 barrel capacity, and devices to minimize gasoline evaporation. A new loading rack with latest metering and safety devices is equipped with a fog-type sprinkler system.

**UTILITIES DEAL**—P. G. & E. buys the outstanding shares of Vallejo Electric Light & Power Company, which now becomes a wholly owned subsidiary.

**SYLVANIA ELECTRIC EXPANDS**—Sylvania Electric Products, Inc., is building a plant on the 2900 block of East 46th Street in the central manufacturing district of Los Angeles. The plant will serve as an assembly point for fluorescent light products.

**DRUM FILLING PLANT**—Time Oil Company drum filling plant, located in the rear of Berth 120, San Pedro Harbor, is established to facilitate loading and filling of oil drums at the Los Angeles port.

**ELECTRONICS CORP. ORGANIZES**—Mars Electronics Corporation, 3000 San Fernando Road, Burbank, organizes to manufacture television sets. Theodore Ulmer is president.

**BRANCH FACTORY**—Parker Rust-Proof Company, Detroit, Michigan, establishes a branch factory at 3710 Fruitland Avenue, Maywood. At new location, chemicals will be compounded for rust-proofing for distribution on the West Coast. Ross Perry is local representative.

**SCIENTIFIC INSTRUMENTS** — Rutishauser Corporation, 488 South Fair Oaks Avenue, Pasadena, organizes to manufacture scientific instruments. Hans Rutishauser is president.

**NYLON PRODUCTS**—Nylon Spinners, Inc., forms to manufacture nylon sewing threads and nylon yarns. Their address is 8815 Mettler Street, Los Angeles. Theodore H. Harwood is in charge of operations.

**FURNITURE FACTORY BUILDING** — Stege Custom Furniture and Cabinet Company, 7346 Ethel Avenue, North Hollywood, organizes and starts construction of a factory building. W. C. Stege is owner.

**WORKSHOP FOR BLIND EXPANDS**—Industrial workshop for the blind moves into its modern factory at 840 Santee Street, Los Angeles. Cost of new plant will run about \$800,000. Workshop is interested in obtaining new products for assembly. George A. Brown is in charge of operations.

**MANUFACTURING CO. ADDS EQUIPMENT**—National Screw and Manufacturing Company, 3421 South Garfield Avenue, adds \$75,000 worth of equipment. New machinery consists mainly of big headers and thread rollers. Harvey Erdman in charge of production.

**CONSTRUCTION STARTED**—Schwartz Custom Body, 306 North Hudson Street, Pasadena, manufacturers of automobile chassis, moves into the new factory building at 1901 East Walnut Street, Pasadena. M. Schwartz is owner.

**FARM EQUIPMENT MANUFACTURER MOVES**—Johnson Farm Machinery Company, manufacturer of farm appliances and equipment, moves from Woodland to Concord. Under president Roy Johnson, they expect production to start by May 1. J. R. C. Jarratt is production manager.

**PRODUCTION OF PHENOLIC MOLDING COMPOUNDS**—Production has started at Loven Chemical Company of Newhall, for manufacture of phenolic molding powder. New plant occupies a 12-acre site and is headed by Dr. K. A. Loven, president; Harry C. Millerburg, vice-president; and Donald M. Nelson, director.

**WESTINGHOUSE BUILDS GATES**—Construction by Westinghouse Electric Corporation plant at Sunnyside is underway on set of slide gates for the Puerto Rico Water Resources Authority.

**GRAND CENTRAL AIRPORT PROPERTY SOLD** — More than three acres of Grand Central Airport property in Glendale have been sold to Arden Farms. Plans are under way to build a new plant on the site.

**CHAIR PLANT ORGANIZES**—Fashion Chair Co., Inc., Los Angeles, organizes to manufacture quality chairs with a promotional price tag. Corporation will make five basic chair styles in quantities resulting in popular prices.

## THE WEST ON ITS WAY

**CONDIMENTS IN BELMONT**—Kuster Laboratories, Ltd., Belmont, will spend about \$200,000 to build a 24,000 sq. ft. plant. Payroll is expected to take in at least 40 persons.

**TV FIRM CONSIDERS L.A.**—Admiral Radio Corp., Chicago, is thinking about putting up an assembly plant in Los Angeles to turn out TV receivers. Other appliances would be added later.

**NEW L.A. ELECT. PRODS. FACTORY**—Pierson Electrical & Engineering Corp., 1017 E. Washington Blvd., L.A., is turning out generators, starters, and electric motors for boats and aircraft as well as industrial purposes.

**ORDER FOR NEW DC-6B TRANSPORT PLANES**—An order for six new Douglas DC-6B transport planes is placed by United Air Lines. The DC-6B's will be in addition to five new DC-6's ordered last August and will bring the company's fleet of DC-6-type transports to 50.

**BREWERY BUYS BREWERY**—Goebel Brewing Co., Detroit, buys Golden West Brewing Co., Oakland. A modernization program will be undertaken for the purchased plant, after which Goebel beer will be introduced in the West. Fritz C. Hyde, Jr., a vice president of Goebel, will handle Western operations.

**1950 MODEL SUPER PLANE FOR \$14,000**—or less, completely equipped, is to be produced by Ryan Aeronautical Co. This new Navion will have a 260 h.p. Lycoming powerplant, will cruise at 170 m.p.h., and climb 1250 ft. per min. with full load. First models will come off the line in a few months.

**TECHNICAL COATINGS INC., SOLD**—along with formulae, processes, procedures, engineering blueprints, etc., to Coast Paint and Chemical Co., 1507 Grande Vista Ave., L.A. All key personnel who have been working in the tank sealing field are retained. L. C. Bolter becomes vice president and chief chemist of Coast Paint, and D. M. MacGregor remains as vice president. The firm is establishing an engineering, research, and development lab to specialize in solution of problems of tank design and sealing.

**GIANT PRODUCTS COMPANY SOLD**—DuBois Company, Cincinnati, manufacturer of specialized cleaning and processing compounds, purchases the Giant Products Company of Los Angeles. This adds the facilities of a branch manufacturing plant, laboratories and offices on the West Coast.

**ROME CABLE CORP. BUYS Andersen-Carlson Mfg. Co., Torrance**, manufacturers of electric metallic tubing for the construction industry. With this acquisition, the parent firm supplements its line of copper rods, bare and tinned wires and cables, magnet and weather-proof wires and a broad line of insulated cables for various industries.

**GITCHA HOT COFFEE HERE**—or would you care for hot chocolate instead? Either one can be had—coffee is only a nickel—and chocolate is a dime—and they both flow from the same machine. It's known as "Hot-O-Mat," produced by a new Los Angeles firm, Interstates Associates, 3348 Motor Ave. Coffee comes with cream and sugar, with cream only, with sugar only, or black; temperatures are regulated between 160 and 180 degrees.

**TWO NEW CONTRA COSTA PLANTS** will employ about 170 persons at peak. Johnson Farm Machinery Co., of Woodland, has been moved into a building of 30,000 square feet floor space, one of two buildings that formerly housed the Hookston winery. Dollar Industries, engaged in mass production precision machine work, will occupy an adjoining structure of 3000 square feet.

**TRAFFIC MAY GO UNDERGROUND** if a now-considered 34-mile tunnel is built through the Laguna Mountains, to link San Diego with the Imperial Valley. San Diego Chamber of Commerce board of directors recently voted to approve Congressional legislation to empower Army Engineers to make a cost and revenue study on this project, known as the "Great Southwest Tunnel project."

**MIDWEST FREIGHT** now enjoys direct service, since Watson Bros. Transportation Co., Omaha, Nebr., bought the local franchise of G.F.D. lines, Inc., San Diego. Richard W. Cole, former vice president of G.F.D. lines, will manage the San Diego office at 3762 Main St.

**SPOT WELDING NEWS** is the invention of a new type of spot welding tip, now being made by Smith Bros. Machine Shop, 5304 Banks St., San Diego. This is an inexpensive way of replacing the tip of a welding gun, rather than the shank and tip together as is current practice, or replacing the tip by machining methods, which is also more costly. These tips can be turned out on automatic screw machine at 30,000 per day. Smith Bros. and Leo W. Cornwall of 492 Second Ave., the inventor, are seeking a national distributor for this product.

**TIDEWATER BUYS CRUDE OIL**—By a contract with Richfield Oil Corp., dated Nov. 2, 1949, Tidewater is assured of a supply of crude oil for a firm period of five years beginning Jan. 1, 1950, at posted field market prices and in volumes which, together with the company's own production and other purchases, will meet its Pacific Coast refining requirements of crude oil. This arrangement supercedes one in force since 1938 with Mrs. Carrie Estelle Doheny and the Los Nietos Oil Co., which purchases were subject to cancellation on 24 hours notice. In the past 12 months, such purchases have averaged about 12,800 barrels per day.

**\$1,000,000 PAINT PLANT**—General Paint Corporation will build a new million-dollar plant in the Vernon area. Lacquer for the entire domestic and foreign needs will be manufactured at this four and one-half acre plant on East Washington Blvd. It will contain approximately 80,000 square feet of productive area. Completion of the plant is expected by September of this year.

**HERSEY COMPANY SELLS MACHINERY DIVISION**—Standard Steel Corporation, of Los Angeles, announces outright purchase of the Drying Machinery Division of Hersey Manufacturing Company of Boston, Mass. J. A. Boyd, chief engineer for Hersey, is moving to Los Angeles to assume a similar position at Standard Steel, assisting Russell J. Love, vice-president in charge of engineering.



• Architects sketch shows what Shell Development Co.'s new administration building in Emeryville will look like when finished. The firm's research facilities will then cover 15 acres and house 1200 employees. This building is an addition to the firm's research laboratories.

**CONSOLIDATED STEEL BUYS SHIPYARD** at Orange, Texas, from General Services Administration, Washington, D.C. This surplus government facility was built by the Navy Department during the last war, and operated by Consolidated for them, as a wartime shipyard. Property is on land owned by Consolidated and adjacent to its existing structural fabricating plant at Orange.

**FURNITURE MART PROPERTY SALE CONFIRMED**—The proposed new Los Angeles Furniture Mart Building became a virtual certainty when Probate Court Judge Newcomb Condee confirmed the sale of the 4½-acre old Washington Baseball Park at Washington and Hill streets, and at the same time Prudential Insurance Company of America announced a construction loan had been committed to the new building corporation. Start of construction of the huge project is expected to begin in the spring of 1950. Ultimate plans call for a completed structure of approximately 2,000,000 square feet costing more than \$10,000,000.

**APPLE PLANT BURNS**—Fire last month destroyed the Garcia & O'Connell apple processing plant near Santa Rosa. Unofficial estimates placed loss as high as \$250,000.

**HARBOR-BOUND TRAFFIC REROUTED**—A project is underway for rerouting much of S.P.'s harbor-bound traffic over a new short line to be built between Puente and Studebaker, near Compton, by the Southern Pacific Railway. A switchyard near Puente is planned, to link the branch with the main line. It was indicated that the branch will lie along the east bank of the San Gabriel River to Firestone Blvd., for a distance of approximately eight miles.

**NEW BRANCH FOR GOLDEN STATE CO., LTD.**—Golden State Co., Ltd., establishes a new distributing branch at San Leandro in temporary headquarters leased from Nelson Equipment Company. Investment of approximately \$100,000 will be made for the erection of a new plant. Art Schwatka, district manager for the company in the San Francisco Bay area, directs activities of the San Leandro plant.

**1,201 MONTHS OLD**—On New Year's Day, Pope & Talbot, Inc. was 100 years old plus one month. This pioneer lumber and shipping firm is one of only a handful of Pacific Coast companies who can trace their origin back to the Gold Rush days.





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## THE WEST ON ITS WAY

**SAN DIEGO SITE LOST TO CANNERY**—One of San Diego's first tuna canneries, Western Sea Products Company, must move before June 30 next from the waterfront location it has occupied for approximately 30 years. No selection of a new site has been announced.

**\$500,000 ISRAEL CONTRACT**—W. R. Ames Company of San Francisco has contracted to sell \$500,000 worth of steel and aluminum pipe to Israel. Contracts were secured through the Israel Supply Mission of New York to supply the Joint Pipe Imports, Ltd., and Israel Citrus Control and Marketing Board, both of Tel Aviv, with pipe.

**MISSILE CONTROLS DESIGN** at Lear Inc., 11916 W. Pico Blvd., L.A. (LearCal Division) are now handled by a newly formed group there. This group is formed primarily to handle military contracts for design and development of automatic control systems.

**PASTUSHIN INDUSTRIES EXPANDS**—Vic Pastushin Industries Inc. announces acquisition of a new factory building as the latest step in an extensive program to expand its production of aircraft components. The company is increasing its facilities and personnel to meet augmented production schedules under contracts with major aircraft manufacturers, airlines and the government. Located at 5741 West 98th street, the new factory unit is near the firm's main plant at Los Angeles International Airport.

**\$500,000 SAN LEANDRO PLANT**—Andre Paper Box Company announce their personnel will be increased to 200 when the new concrete and steel plant opens in March. The structure is being built on a five-acre site at 132nd Avenue near Merced Street, San Leandro. Executive offices of the firm will be maintained on the fifth floor of the present factory at 545 Mission Street.

**MERGER ANNOUNCED**—Brucon Company of San Francisco, who handle hydraulic vices and equipment, merges with Plastic Fabrication Company of Seattle. The former has moved its plant from San Francisco to Belmont, California, and will engage in the plastic sign production business for the West Coast. Company name has been changed to Illuminating Display Company.

**\$1,000,000 CORRUGATED BOX SITE**—National Container Corporation will start construction of a new plant on a 5½-acre tract in the central manufacturing district of Los Angeles at an approximate cost of \$1,000,000. A sheet plant and warehouse now in operation in Los Angeles will be discontinued when the new plant is completed. George J. Schneider, vice-president of the California subsidiary of National Container Corp., Long Island, N. Y., will have general management of the new plant, which will employ about 125 workers.

**FROZEN CONCENTRATES PLANT**—Construction of a \$500,000 plant for production of frozen juice concentrate, to be completed in the near future is planned by EATINGTON Fruit Company of Fullerton. Officers of the new corporation are Thomas J. Eadington, president; Stanley Strain, vice-president; W. H. McCaffrey, secretary-treasurer, and Paul F. Eadington, assistant secretary-treasurer.

**BETHLEHEM PACIFIC COAST STEEL**—The Pacific Coast Shipyards of Bethlehem Steel Company located in San Francisco, Alameda and Terminal Island, California, have been conveyed to Bethlehem Pacific Coast Steel Corporation. Bethlehem Shipbuilding and Ship Repair activities on the Coast will hereafter be conducted by Bethlehem Pacific Coast Steel Corporation. T. C. Ingersoll, general manager of the Pacific Coast District, Shipbuilding Division, Bethlehem Steel Company, will continue in charge of these activities and become general manager of the Shipbuilding Division, Bethlehem Pacific Coast Steel Corporation.

**\$8,000,000 CONTRACT FOR GILFILLAN BROS., INC.**—Gilfillan Bros., Inc., receives additional \$8,000,000 contract for GCA radar landing equipment from Air Force.

**CHANGE OF NAME**—Name of the Emeryville Chemical Company, which operates a silicate of soda plant, has been changed to Diamond Alkali Company of California. The plant will continue as a wholly-owned subsidiary of Diamond Alkali Company, Cleveland, Ohio, which in 1944 purchased the Emeryville plant. No policy or personnel changes are anticipated at Emeryville.

**RARE-EARTH DEPOSIT FOUND**—Discovery of rare-earth minerals has been uncovered in southeastern California in an extremely unusual geological formation. Location of the deposit lies near Mountain Pass Service Station on Route 91 in San Bernardino County. Recognition of the unusual nature of the deposit was made when a Geiger counter found the minerals to be radioactive by test. There are at least five veins within an area of about 600 by 1,500 feet, three of which contain considerable bastnasite, a fluorocarbonate of cerium and lanthanum, with thorium and uranium. Other rare-earth minerals are present.



## THE WEST ON ITS WAY

### COLORADO

**BRICK PLANT SOLD**—Diamond Fire Brick Co., Canon City, manufacturers of fire brick, silica brick, and locomotive arch tile, has been acquired (by purchase of capital stock) by Laclede-Christy Co., St. Louis. Local expansion is planned by the new owners.

**DELTA PLANT GETS DIESEL POWER**—Delta Municipal light plant has installed a new \$259,000 diesel unit. Production capacity is increased by 1202 KWH, providing a total output capacity of 2857 KWH.

**FLOUR MILL BURNS**—Crescent Flour Mills' already burned shell at Denver suffered additional fire damage. Property damage was negligible. The ruined mill was being partially razed when sparks ignited debris at the ground level.

**\$15,000,000 PAPER MILL OK'D**—Construction of a \$15,000,000 pulp paper mill on Colorado's Western slope appeared certain as a result of an invitation by the government for bids on 4,565,000 cords of national forest timber. Invitation specified that the mill must be located near the timber supply. Columbine Development Co. contemplates building such a mill on the Colorado River between Glenwood Springs and Rifle.

**\$4,500,000 ELECTRONICS CONSTRUCTION**—Construction of a \$4,500,000 radio research laboratory in Boulder will be started in 1951. Laboratory will be constructed on 220 acres of land at the southeast edge of the community near the Denver-Boulder toll road. Boulder Chamber of Commerce will donate the site which will cost about \$70,000 to the federal government.

**\$1,500,000 CARLTON MILL PROJECT** — Construction of the swiftly rising new Carlton mill of the Golden Cycle Corporation midway between Cripple Creek and Victor is underway, with workmen working seven days a week. Test runs of the mill are set for next fall.

**GEOLOGY AND COAL RESOURCES MAP AVAILABLE**—Geological Survey announces new San Juan Basin map covering an area of about 260 square miles in the San Juan Basin of New Mexico and Colorado available to public. The map and text are titled "Geology and coal resources of the Durango area, La Plata and Montezuma Counties, Colorado."

**PUEBLO OIL CANNING PLANT**—Cliff Brice, Pueblo petroleum products dealer, has construction underway for an oil canning plant at Pueblo. The factory, which will produce motor oil in quart and two-gallon cans and in five-gallon barrels, will be housed in a prefabricated aluminum building. Previously, most motor oil used in this area has been shipped in from the East and West coasts.

**AIR BASE SITE OCCUPIED**—Woodcraft Mfg. Company, manufacturers of church furniture, moves from Rocky Ford to La Junta to permit expansion. B. F. Stauffer of Rocky Ford and Leo Kipper of La Junta will build a frozen food plant. Both industries will use the old Army Air Base site at La Junta for their operations.

**LARGE PAYROLL AT ENGLEWOOD** — Electron Corporation, manufacturers of V-pulleys, will use approximately 400 workers at its new plant now under construction at Englewood. Plant is located at South Santa Fe Drive and Bellevue.

**PUEBLO STEEL PLANT IMPROVEMENTS**—Improvement program for the C. F. & I.'s Pueblo steel plant is underway to build a rail slitting and rerolling mill on the space formerly occupied by the old rod mill. Products of the mill will include mine rails and fastenings, concrete reinforcing bars, fence posts, light structural shapes, sign posts, flats, rounds and squares.

### IDAHO

**BIG PHOSPHATE FIND**—In the dry ridge deposit near Soda Springs, Idaho, it is estimated that there is a minimum supply of 5,000,000 tons of high grade phosphate rock. Charles Baker, general manager of Pacific Co-Operative Supply, has asked Bonneville power administration to run their lines into the region so that an electric oven process can be used to process the rock.

**BLOCK CAVING OPERATIONS INCREASE PRODUCTION**—A 900 per cent increase in production per man in the new block-caving program of Bunker Hill & Sullivan Mining and Concentrating Company, over methods ordinarily used in the Coeur d'Alenes has been made. The new system of mining was planned by engineers for Bunker Hill in order to extract some 5,000,000 tons of low grade ore in the old upper workings where the high grade has already been taken out.

February, 1950—WESTERN INDUSTRY

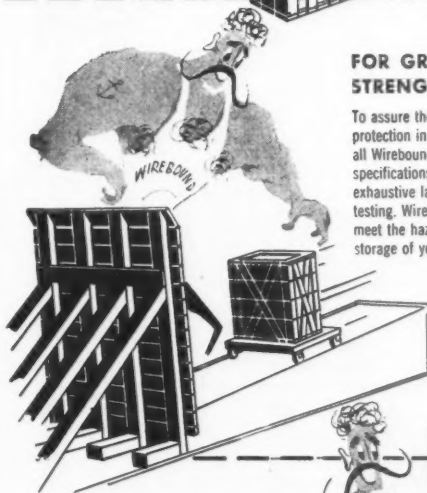
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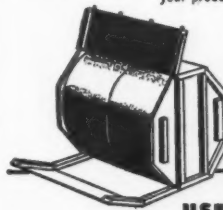
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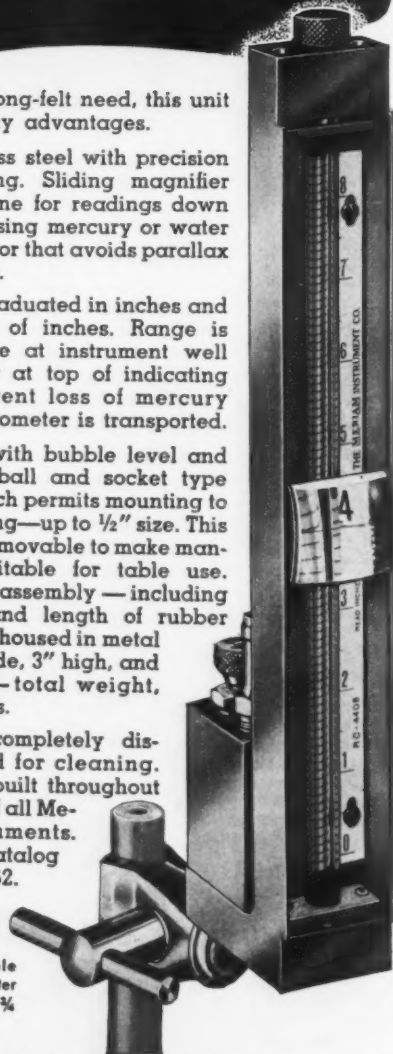
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## THE WEST ON ITS WAY

**SAGEBRUSH PLANT MAY BE USED**—Utilization of the sagebrush plant in Idaho to produce "an economically valuable product" was disclosed at the All-Idaho Congress recently. At the present stage of development, identity of the product could not be divulged.

## MONTANA

**NEW PIPELINES**—Montana-Dakota Utilities Co. of Minneapolis is authorized to lease and operate a pipeline linking the Baker, Montana area with the Worland, Wyoming source. This line will be 340 miles long, of 12 3/4-inch pipe. It will be constructed by a newly-formed firm, Montana-Wyoming Gas Pipeline Co., and will furnish 25,000,000 additional cubic feet daily (natural gas) by the end of 1950. M-D is also authorized to build two other lines: one, a 1 1/2-mile branch to connect with M-D's present 8-inch pipeline at Miles City; the other, a 3-mile branch to connect with a distribution system to be built at Forsyth. This project, to be leased on a 25-year basis, is expected to cost around \$9,089,085. It includes new construction of a combination gas compressor, dehydration and sulphur removal plant near Worland, Wyoming.

**GREAT NORTHERN DIESELIZES**—By the end of 1951, the railway's territory West and south of Havre will be entirely dieselized. Orders have been placed for about 9,000,000 worth of new passenger equipment. The road expects to have 262 diesel-electric locomotives in operation by 1952.

## NEVADA

**BASIC MAGNESIUM OFFER ACCEPTED**—Nevada Colorado River Commission accepts offer made by Harvey Machine Co. of Torrance, California, for purchase of Basic Magnesium facilities for use in aluminum metal production. Acceptance was made conditional upon a certain amount of Hoover and Davis dam power held by Combined Metals Company and an outstanding option for BMI facilities.

**MINING OPERATIONS RESUME**—Mining operations have been resumed at the tungsten mine and mill in northern Pershing County owned by Nevada-Massachusetts Co. Approximately 425 tons of ore will normally be handled every 24 hours.

**RENO ARMS FACTORY**—Stanley W. Moulding, president of Nevada Arms Industries, announces plans for construction of an arms factory in Reno to manufacture sub-machine guns and other weapons. Incorporation proceeds have been completed in Nevada with more than \$1,000,000 in capital stock. Site for plant and housing project has not yet been decided upon. The proposed factory will employ approximately 1,200 workers with an annual pay roll of \$1,000,000.

## OREGON

**PORTLAND PLANT PURCHASED**—Multnomah Plywood Corporation purchases the Portland Plywood Corporation plant under construction in Portland. \$1,000,000 plus assumption of a \$43,685.64 first mortgage on the land was a consideration in the transaction. The plant will have a capacity of 3,000,000 square feet of plywood a month, with provision for expansion to 4,500,000 feet by adding another dryer. F. A. Johnson is president; George A. Cramer, vice-president; Clyde A. Smith, secretary; John A. McMillan, treasurer.

**PLYWOOD PLANT SOLD**—Linn Plywood & Door, Inc., purchases Western Door & Plywood Company at Albany, Oregon. J. W. Reynolds, formerly of Anacortes, Washington, is manager. Western Door & Plywood Company will conduct its future plywood activities in the plant formerly occupied by Kelly Boat Company at Milwaukie, Oregon. Both hardwood and softwood panels will be produced in this factory.

**REYNOLDS ALUMINUM BUYS PLANT**—An aluminum reducing plant is sold to Reynolds Aluminum Company at Troutdale, Oregon. This is one of five properties sold to Reynolds Aluminum Company recently for \$50,081,958.

## UTAH

**CARLISLE MFG. COMPANY ESTABLISHES NEW PLANT**—Edward C. Carlisle, Chamber of Commerce member, leases State Armory site at Manti which was operated during the war as a parachute plant. Approximately 60 people will be employed in the Manti area in the manufacture of men's work clothing.

## THE WEST ON ITS WAY

**OIL POURS THROUGH NEW CARRIER LINE**—At Salt Lake Pipeline Company's \$12,000,000 pipeline project, an estimated 50,000 barrels of oil products rushed through the Salt Lake-Twin Falls leg recently. Ultimately, the line will extend to Pasco, Washington, and is designed to carry gasoline, diesel fuel and heating oils. Delivery points will be Ogden, Burley and Twin Falls. Completion of the project is expected during the fall of 1950. The line's capacity is placed between 75,000 and 80,000 barrels. C. E. Finney, Jr., is president.

## WASHINGTON

**SOUND PAINT MANUFACTURING CO. SOLD**—W. P. Fuller & Company purchases Sound Paint Manufacturing Company of Seattle. Wm. F. Grubb, owner of Sound Paint, will remain as manager of plant. Name will be Sound Paint Manufacturing Co. Industrial Finishes Division of W. P. Fuller.

**LUMBER CARRIER SERVICE**—Long-Bell Lumber Co. purchases the motorship Mokupapa which will be converted into lumber carrier for coastwise service between Longview, Wash., and San Pedro, California. Reconversion contract for \$35,000 awarded to Northwest Marine Iron Works, Portland, Oregon. The ship, renamed Jesse Andrews, will be capable of carrying 650,000 feet of lumber.

**AMBOY MILL BURNS**—Bracey Neal Lumber Company mill at Amboy burns to the ground. Loss was estimated at \$150,000.

**DIESEL-ELECTRIC PLANT SITE**—A new Diesel-electric generating plant at Ellensburg will be installed at municipal hydroelectric plant instead of at municipal wells as planned. Change will permit use of manual instead of automatic controls at considerable cost saving.

**\$4,000,000 CONTRACT FOR FOUNDRY CO.** — Western Fruit Express awards \$4,000,000 contract to Pacific Car & Foundry Company to build 450 sliding-door refrigerator cars. Work will begin early in March at the company's Renton plant.

## LUBRICATION ECONOMY

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This remarkable saving was reported to us by the Wolverine Shoe & Tanning Corporation of Rockford, Michigan. Their unsolicited letter stated—"For every dollar we pay for LUBRIPLATE Lubricant No. 100 we save \$7.00 in chain replacements". You, too, can enjoy the savings made possible with LUBRIPLATE Lubricants.

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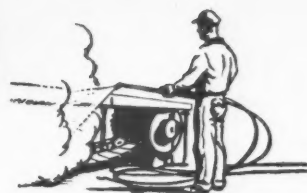
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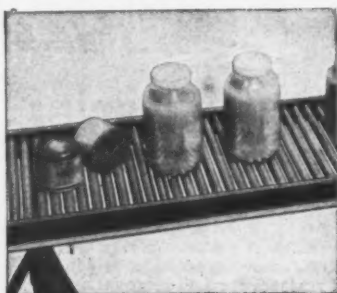
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**FRENCH & HECHT  
DIVISION**

**KELSEY-HAYES WHEEL COMPANY  
DAVENPORT, IOWA**

*Wheel Builders Since 1888*

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## THE WEST ON ITS WAY

### WYOMING

**OIL COMPANIES MERGE**—Powers Oil and Drilling Company of Wyoming and Western Oil Fields, Inc. of Colorado merge. Colorado firm listed 10,000,000 shares of stock at one cent each and the Wyoming company listed 4,000,000 shares at 25 cents each.

**RICH URANIUM STRIKE IN BLACK HILLS** — Unofficial announcement is made of a rich uranium strike in the Black Hills of Wyoming, with predictions the discovery will exceed anything yet found in Utah or Colorado. The reported strike is on timbered slopes of Bear Lodge mountains, nine miles west of Sundance. More than 250 claims have already been staked out.

**ASPHALT INFORMATION**—Technical paper No. 717, entitled "Asphalts from Rocky Mountain Crude Oils, Laboratory Preparation and Comparison," offers studies of 117 asphalts from 25 crude oils of Wyoming, California and Montana as well as Arkansas and Mexico. Asphalts produced from Rocky Mountain "Black Oils" compare favorably in commercial use with those obtained from other sources widely used by the asphalt industry, according to this report. Copies may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 25 cents.

**GAS POWERED GENERATOR OK ASKED**—Permission has been asked to build and operate a natural gas utility in Wyoming that will be used to produce electricity for the large power generating unit of Black Hills Power & Light Company at Osage. Construction cost will run about \$200,000 for the gathering system and 17-mile pipeline.

**\$23,000,000 TO BE SPENT BY UNION PACIFIC**—Union Pacific Railroad announces plans to buy or build between 4,000 and 5,000 freight cars within the next 12 months at a cost of \$23,000,000. Much of the work will be undertaken in the Cheyenne car shops where the railroad's chief steel repair shops are located. Other work will be done in company shops at Omaha, Grand Island, Nebraska and Denver.

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WESTERN INDUSTRY—February, 1950



# WESTERNERS AT WORK

## California

K. B. Jacobsen appointed West Coast secretary of the Liquefied Petroleum Gas Association. He succeeds Don McNary, who has resigned to accept a position with the Calor Gas Co., Oakland.



Joseph Druliner

**Joseph Murray Druliner** appointed chief industrial engineer of Northrup Aircraft, Inc. He has been assigned to the office of **Kenneth P. Bowen**, assistant vice president in charge of production at Northrup, where he will head up industrial engineering planning and activities for Northrop's production of Scorpion F-89 all-weather interceptors and Raider C-125 transports for the U. S. Air Force.

**Joseph H. Moore** promoted to plant superintendent for Vic Pastushin Industries, Inc.

**Robert E. Morris**, southern California ice cream sales manager for Golden State Company, Ltd., elevated to post of northern California sales manager. His headquarters will be at the company's general offices in San Francisco.

**E. D. Moody** becomes assistant general manager of the Southern Pacific Railroad's lines in six Western states. He succeeds the late **W. M. Petterson**. **A. S. McCann**, superintendent of transportation, succeeds to Moody's former job.

**Owen W. Gaudern** promoted to manager of purchases, Fluor Corp., Ltd., Los Angeles, with which company he has been associated since 1934.

**Howard Kyser**, formerly plant production superintendent, Vernon, California, plant of Studebaker Pacific Corporation, appointed general superintendent.

**Lou W. Christen**, serving for the past seven years as Portland manager of the Universal Carloading & Distributing Company, appointed assistant to the Pacific Coast general manager of the company, with headquarters in Los Angeles. **Roy W. Morgan** succeeds Christen in the Portland job.

**George C. Montgomery** chosen to fill newly created position of assistant administrative superintendent at Shell Oil Company's Wilmington - Dominguez refinery, with **George A. Lorenz** replacing him as assistant operations superintendent. Montgomery in his new position will handle all personnel and industrial - relations matters, including plant protection.

**George L. Tyler** made West Coast manager for du Pont's Petroleum Chemicals Division, replacing **David H. Conklin**, who has been promoted to assistant sales manager with headquarters in Wilmington.

**H. N. Eidswick**, controller of Pacific Can Company, San Francisco, named-treasurer of the company succeeding **Edward F. Euphrat**. Euphrat has been elected a director of the company.

**Robert E. Bundy** becomes vice-president in charge of production for Fibreboard Products, Inc. in San Francisco.

**Dr. George G. Brown**, chairman of the Department of Chemical and Metallurgical Engineering at the University of Michigan, named director of the U. S. Atomic Energy Commission's Division of Engineering. **Dr. Brown** will assume his duties on a part-time basis immediately and will join the AEC staff on a full-time basis in the spring. He will be connected with the chemical engineering program involved in the establishment and operation of reactors at the new Reactor Testing Station in Idaho, and at West Milton, N. Y.

**A. L. Snow** named manager of the Patent Department and elected vice-president of California Research Corporation, a subsidiary of Standard Oil Company of California. He succeeds **J. N. Adams**, vice-president of the research company, who retired after more than 31 years of service.

**T. N. Bland** elected president of Fibreboard Products, Inc., succeeding **D. H. Patterson, Jr.** **R. B. Knott**, controller, named to newly created office of vice-president in charge of finance. **Finley Thompson** elected controller and **B. R. Colkett** elected secretary succeeding the late **V. C. Hobbs**.

**George Bowersox** appointed regional manager of the Coast Counties Gas and Electric Company in California. He now directs the company's operations in Contra Costa County.

**Robert E. Donovan**, manager of the Safety Division of Standard Oil Company of California, elected new president of Veterans of Safety, and **Elmo E. Chappell**, safety director of General Motors' Chevrolet plants in Oakland, as secretary-treasurer.

**Kenneth E. Kingman** appointed manager of manufacturing for Union Oil Company. **Elmer B. Palmer** fills Kingman's former position as manager of the company's Los Angeles refinery.



Eric Dudley

named manager of aviation development and manager of the Pacific Coast District of Tinnerman Products, Inc. Prior to joining the Tinnerman organization in 1946, Dudley was with the Boots Aircraft Nut Corporation, Stamford, Conn., and with Curtis-Wright Corporation, Columbus, Ohio. He will make his headquarters in Los Angeles.

**Geo. J. Schneider** starts ground-breaking ceremonies this month for the southern California plant of National Container Corporation of California. He becomes head of both plants, dividing his time between the two operations. **F. B. Turner** and **W. J. Prudler** named assistant general managers in Oakland and Los Angeles, respectively. Plant superintendent in Oakland is **C. Moss**, and in Los Angeles is **L. Iride**.

**P. M. Virtue**, president of Virtue Bros. Manufacturing Company of Los Angeles, becomes sole owner, having purchased the interest of his brother, **J. A. Virtue**, in the chrome furniture manufacturing firm.

(Continued on next page)

• Two of the exhibitors in the fourth annual Industrial Electrical Show sponsored by the Electrical Maintenance Engineers Association are shown here as they signed contracts for display space. At the left is **Ward C. Rasmussen**, purchasing agent for the Larsen-Hogue Electric Co., Los Angeles; seated is **Albert A. Dally**, purchasing agent for the Mullenbach Electrical Mfg. Co., Los Angeles; at right is **F. J. Rohring**, Southern California Edison Co., EMEA vice-president and general chairman of this years show, to be held in Shrine Convention Hall, Los Angeles, March 15, 16, 17, 18.



## WESTERNERS AT WORK

Fred S. Renauld & Co. named Los Angeles representatives of Graver Water Conditioning Company, with headquarters in Los Angeles, and operating in southern California, Mexico and Lower California.

Fred J. Drewes appointed foil division manager of Kaiser Aluminum and Chemical Corporation. He is now in charge of both production and sales with headquarters at Permanente, California.

George H. Supple appointed vice-president and director of pipe lines for General Petroleum Corporation succeeding J. L. Martin, retired.

Walter E. Boschin elected vice-president and assistant general manager of Glass Containers, Inc., with headquarters in San Francisco.

C. Stewart Ferguson, formerly engineering manager of the Chemicals Division of General Electric Company's Department in Troy, New York, appointed West Coast manager of that division.

F. M. Rich, vice-president in charge of operations for Kaiser Steel Corporation, transfers his headquarters from Oakland to the mills at Fontana, California.

Dr. Charles J. Marsh named assistant to the vice-president of Golden Gate College, San Francisco.

C. A. Yeatman named chief mechanical engineer for Shell Oil Company, Los Angeles, succeeding J. R. Gignoux, who is retiring after 32 years of service.

Charles W. Huse appointed director of public relations for United States Steel Corporation Subsidiaries, Western District.

Holcombe Parkes, vice-president in charge of public relations of National Association of Manufacturers, will resign on February 6 to become executive vice-president of Apex Film Corporation, Los Angeles. He will be succeeded by J. T. Thatcher, assistant to the vice-president, who will become acting director of public relations.

H. L. McKinley, former plant manager for U. S. Vanadium Corporation's Pine Creek, California operations, named general superintendent. He succeeds David D. Baker, resigned.

John Cullen appointed assistant superintendent of the Yards, Roads and Transportation Department at the Kaiser Steel Plant, Fontana, California, and J. L. Devine has been named General Yard Master.

Earl J. Bechard appointed production manager of Diamond Match Company's California lumber and building supply division. He was formerly manager of the company's Minnesota operations. Ira E. Brink promoted to general manager of Diamond's 70 retail lumber yards and building supply stores and two apiary departments in California.

## Colorado

Gordon R. Kay, president of Bay Refining Company, Denver, resigns to become president of the Morton Oil Company in Wyoming. Merle E. Morton, president of the Rocky Mountain Trucking, and Yellowstone and Morton drilling companies, named chairman of the board when Kay assumes his new position.

John R. Gilbert, secretary of California Electric Power Company in Denver, named vice-president and treasurer, succeeding Lawrence C. Phipps, Jr., who is retiring.

H. S. Worcester resigns as president of Telluride Mines, Inc., Telluride, Colorado; succeeding him is E. S. McCurdy of San Francisco. C. F. Parker, Jr., advanced to general manager; T. McCandless becomes mine superintendent; Arthur Hilander will be chief engineer.

E. C. Bitzer appointed executive vice-president and general manager of Colorado Iron Works, succeeding T. A. Dickson, deceased.

Walker R. Young of Denver, former chief engineer of U. S. Bureau of Reclamation, named president and treasurer of Thompson Pipe and Steel Company. He succeeds the late J. Leslie Brown as head of the Denver firm, which specializes in water mains, culverts and similar fabricated steel products.

## Idaho

W. M. Fredericks elected president of Idaho Goldfields, Inc.

Ernest E. Eddy of Spokane, Washington, named manager of the Cumberland mine at Lennep, Montana. The mine is now run by Silverton Mines, now engaged in a large program of rehabilitation.

Establishment of a three-man Engineering Advisory Committee to consult and advise the Idaho Operations Office, U. S. Atomic Energy Commission, has been announced. Committee members are General L. J. Sverdrup, chairman; Dr. H. M. Crothers, and W. W. Horner. All three have long and distinguished records in the field of engineering.

Glen C. Lee named president of Hope Silver-Lead Mines, Inc., in Clark Fork, Idaho. He succeeds Albert M. Nash who resigned after 15 years of service but who will continue on the board of directors. Edwin L. Groenig and C. D. Edmonds named vice-presidents.

## Montana

Walter G. Hay named superintendent of the rod and wire mill of Anaconda Copper Company, Great Falls, Montana.

James Scott promoted to board plant superintendent of the U. S. Gypsum Company at Heath, Montana. He is succeeded by William Stephens, who will direct a new plant being built in Gerlach, Nevada. Robert Decker promoted from chief tester to acting quality supervisor. He succeeds Lynn Speaker.

## Nevada

Roy A. Hardy, consulting engineer of Getchell Mine, Inc., of Reno, named program chairman of the metal mining convention and exposition to be held in Salt Lake City August 28-31, 1950. State chairmen and members of the committee will be appointed in the near future.

## Oregon



G. R. Coffin

George R. Coffin named district manager of the United States Steel Supply warehouse in Portland, Oregon. He was formerly assistant district manager. Mr. Coffin joined the United States Steel Supply Company as a salesman in the Chicago and San Francisco territories after the war.

Herbert Wymore, now on special assignment at Lebanon, Oregon, assumes management duties at Lebanon under the title of acting resident manager.

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This inexpensive "Linco-welder", made by Lincoln Electric Co., Cleveland, O., is easily mounted on running gear or truck for welding service anywhere.

Welding at the breakdown-scene . . . adds up to savings in time and labor with this light but rugged 180 amp. Lincoln Welder, powered by a two-cylinder Wisconsin Heavy-Duty Air-Cooled Engine.

The performance satisfaction of Wisconsin Engine power increases not only the reliability of equipment in all fields, but also increases the confidence of both equipment user and builder. They're sold on such features as self-cleaning, thrust-absorbing Timken tapered roller bearings at both ends of the crankshaft . . . fool-proof air-cooling, from sub-zero to 140°F . . . an easily serviced OUTSIDE rotary type, high tension magneto with impulse coupling, for quickest any-weather starts . . . plus heavy-duty construction, inside and out.

Your investigation is invited! 3 to 30 hp., 4-cycle single-cylinder, 2-cylinder, and V-type 4-cylinder models.



## WISCONSIN MOTOR CORPORATION

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Bruce Morehead, logging manager of Mt. Emily Lumber Company, La Grande, Oregon, elected new president of the Pacific Logging Congress. Sidney G. Smith elected vice-president; A. L. Mills re-elected treasurer.

P. T. Sinclair, resident manager for Crown Zellerbach Corporation in Oregon, promoted to staff assistant of manufacturing in San Francisco headquarters. He is succeeded at West Linn by Malcolm Otis, resident manager at Port Angeles, Wash.

## Utah

James V. Mazuries succeeded R. D. Peterson as superintendent of rolling mills at Geneva Steel Company, Geneva, Utah.

Fred S. Mulock succeeds Michael H. Kuryla as president of the U. S. Smelting, Refining and Mining Company upon his retirement March 1, 1950. Mr. Mulock became operating vice-president on January 1, 1950, with headquarters in Boston, Mass. He was formerly vice-president and general manager of Western operations. W. C. Page succeeds Mr. Mulock.

George T. Cunningham, Wyoming plant engineer for Mountain States Telephone and Telegraph Company, transferred to Salt Lake City as Utah plant engineer. G. R. MacDougall, Wyoming exchange plant engineer, succeeds Mr. Cunningham.

B. L. Johnson, mining and metallurgical engineer, appointed vice-president in charge of operations at Caquique, Guatemala, for Compania Minera de Guatemala, an American financed enterprise, succeeding L. K. Requa.

H. L. Garrity named superintendent of mines, and L. F. Pett named mine superintendent at the Bigham open pit mine by Kennecott Copper Corporation, Utah Copper division.

## Washington

Dean H. Eastman, Western counsel for Northern Pacific Railway, named assistant vice-president with Seattle headquarters, coincident with transfer of Robert S. Macfarlane, executive vice-president, from Seattle to St. Paul. Mr. Eastman will continue as Western counsel.

E. D. Mairs, former assistant manager at the Masena, N. Y., works of Aluminum Company of America, named works manager of the mill in Vancouver, Washington. R. W. Knapp, former melding department superintendent of Alcoa's Newark, Ohio, plant, will be assistant works manager.



E. C. LaBart

Victor Olson named general manager of Washington Vencer Company plant in Olympia, succeeding H. W. McClary.

## Wyoming

George T. Cunningham, former Wyoming plant engineer for Mountain States Telephone and Telegraph Company in Salt Lake City, named assistant Utah plant engineer.

Dean M. Fox named district superintendent for General Petroleum Corporation in Rocky Mountain area, with headquarters in Casper.

## Associations Elect

**Independent Petroleum Association of America:** Everett T. Crumley, Montana state vice president, succeeding M. R. Wagner who recently resigned as vice president but remains a director of the association.

**Salt Lake Chapter, National Association of Corrosion Engineers:** Chairman, Harry R. Brough, engineer with Mountain Fuel Supply Company, Salt Lake; first vice chairman, William Littreal, Utah Oil Refining Company engineer; second vice chairman, R. W. Vance, Utah Power & Light Company.

**Leo Van Aspinwall**, head of the marketing department of the University of Colorado, re-elected president of the American Marketing Association, and Bert Butcher of C. A. Norgren Company, named vice-president and chairman of the program committee. Others officers selected include Warren Foss, secretary; Mark Bentson, treasurer.

**Northwest Frozen Foods Ass'n:** President, A. L. Reiling of Birds Eye-Snyder at Hillsboro, succeeding Arthur Symons of Hershey Packing Co., Seattle; vice president, A. B. Chappel of R. D. Bodle Co., Seattle; E. M. Burns reelected secretary-treasurer.

**Santa Clara County Cannery Association:** President, J. R. Braden, Richmond-Chase Company; vice president, C. B. Weston, Libby, McNeil & Libby; secretary-treasurer, Robert J. Marsh, Cannery League of Calif.

**Henry W. Clark** elected president of Pacific Maritime Association, succeeding O. W. Pearson. Mr. Clark formerly served as PMA's vice-president and general manager.

**American Council of Commercial Laboratories:** Dr. Roger W. Truesdail of Truesdail Laboratories, Inc., Los Angeles, elected president.

L. B. Hampton named president-manager of Industrial Relations Council of Utah; Joseph Rosenblatt named chairman of the board; E. T. Brown elected vice-president; F. S. Walden elected treasurer; D. O. Clark elected secretary.

**California State Water Pollution Control Board:** The nine members recently named to the board: A. M. Rawn, chief engineer and general manager, Los Angeles County sanitation districts; Don D. Lucas, Kern River Oil Fields Company; Mrs. Leila E. Baesken, Orange; G. E. Arnold, director, San Diego City Water Department; J. J. Krohn, California Barrel Company; Keith Mets, El Centro; Ralph E. Sanborn, California Packing Corporation; Wirt Morton, member of County Planning Commission; Don McMillin, city manager, Pasadena.

**California Fertilizer Ass'n:** President, James M. Quinn, California Sun Fertilizer Co., Los Angeles; vice president, Lowell W. Berry, The Best Fertilizer Co., Oakland; secretary, Paul Pauly, Pacific Guano Co., Los Angeles; treasurer, Grover Dunford, Inland Fertilizer Co., Los Angeles; executive secretary and manager, Elmer S. Nelson, Los Angeles.

**Manufacturers Association of Colorado:** President, Albert E. Seep, Mine and Smelter Supply Company; vice president, R. S. McIlvaine, Rainbo Bread Company; treasurer, George F. Andrist, The Mountain States Telephone & Telegraph Co.; secretary-manager, L. H. Kittell.

**Rocky Mountain Oil Industry Information Committee:** Chairman, G. F. McMillan of Denver, district manager of Gulf Oil Corporation, succeeding Paul Hirth of Continental Oil Company.

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**DFC REFRACTOR CATALOG NO. 150**

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NEW YORK, N. Y.   DENVER, COLO., U. S. A.



# Western TRADE WINDS

News about those who distribute and sell industrial equipment and materials

Reginald C. Cushing, regional sales manager for air conditioning controls of Minneapolis-Honeywell Regulator Company, named San Francisco Bay Area branch manager. C. L. Peterson, Pacific sales manager in San Francisco, moves to Chicago as office manager, being succeeded by Gavin S. Younkin, Los Angeles branch manager, Pacific regional headquarters, being transferred to Los Angeles.

Whitney Reed, who joined Pioneer Water Heater Corporation of Los Angeles, in the Spring of 1949, has been appointed sales manager of all divisions.

Allis Chalmers appoints: Arthur Forsyth Co., 3150 Elliott Ave., Seattle, dealer for motors and controls in King County; Farm Tractor Co., Gresham, Ore., dealer for centrifugal pumps in Clackamas County. Arthur Forsyth is president and Earl Constant is sales manager of the former firm; D. W. and D. M. Bergh are partners in Farm Tractor Co.



D. W. Jones, Jr.

David W. Jones, Jr., Denver, Colorado, named representative for Lukens Steel Company and its divisions, By-Products Steel Company and Lukenweld, in the sale of steel plate and specialty plate products in the Rocky Mountain area. His territory includes Colorado, Idaho, Utah, Montana and Wyoming.

William C. Bruton named district sales manager for American Brake Shoe Co., American Manganese Steel division, including Alaska and the Pacific Northwest, with headquarters at Oakland, Calif. Robert H. Elem becomes Pacific Coast manager of welding products department, headquarters at Los Angeles.

Macauley Engineering Co., 6331 N. Figueroa St., Los Angeles, appointed sales and service agency for Thomas Metal Master. This unit is made in different portable models to remove broken taps and drills in hard ferrous metals.

Snyder Engineering Co., Los Angeles, announce the following additions to their staff of sales engineers: R. I. "Bob" Marquis, who will represent them on behalf of Loudon Machinery Co., and on conveyors; Thomas Costello, who will represent them on behalf of the Cleveland Worm and Gear Co., Farval Corp.

Cost Reduction Equipment Co., Los Angeles, appointed sales representatives in the southern California territory for Alvey-Ferguson Company's line of conveying equipment and machinery.

George C. Lichty, formerly factory representative for Gerlinger Carrier Co., Dallas, Ore., becomes assistant sales manager for that firm.

Nordberg Manufacturing Co., Milwaukee, Wis., appoints H. G. McKinney & Co., Wilmington, Calif., and Northwest Distributors, Ltd., Vancouver, B.C., distributors for the new Nordberg 4FS-1 Diesel engine, a single cylinder extra heavy duty vertical unit rated at 15 h.p. at 1,800 r.p.m., and 10 h.p. at 1,200 r.p.m.

H. George Richardson, 324 Sun Bldg., Boise, Idaho, appointed sales representative in southern Idaho for National Radiator Co., Johnstown, Penna.

Field service representatives of the North Pacific, South Pacific and Southwestern Divisions of Oakite Products, Inc., manufacturers of specialized industrial cleaning materials, recently attended a series of technical sales conferences held by the company at the Biltmore Hotel, Los Angeles. Highlighting these meetings were reports delivered by the company's research chemists, service engineers and technical specialists on latest trends in cleaning and allied materials designed to assist industry in combating rising production costs. Also discussed were new materials scheduled to be made available by the company during the coming year.

Equipment Engineering Company, San Diego, appointed by Bowser, Inc., as jobbers for their liquid control equipment in San Diego, Imperial and Riverside counties.

Kaiser Gypsum in Oakland make three new additions to their sales force to serve accounts in the Northern California area: W. G. McPartland, stationed in Fresno; Frank Dietz, stationed in San Jose, to serve the Santa Clara Valley area, and Walter Lord, with headquarters in Portland, for the Northwest area. Colin Campbell has been named district sales manager of the new Northern California district. The company's southern California area has added Dick Northon and Jim Hague to its sales force.

Standard-Knapp Division of Hartford-Empire Co. has acquired ownership of Mailler Searles, Inc., San Francisco, Western packing equipment house. Mailler Searles will function as application engineers for the Standard-Knapp Division of Hartford-Empire Co., and in the same capacity for other manufacturers of packing machinery and package-handling equipment, including new accounts recently negotiated. William H. Jaenicke continues as Mailler Searles president and Robert H. Helliwell as assistant secretary; other officers and directors are identified with the parent company.

McConkey-Docker & Company, Phoenix, Arizona, announced as authorized stocking distributors for Chain Belt Company of their "Rex" line of chain belts and sprockets; territory served will be in and around Phoenix.

Carlis H. Neafus appointed general sales and advertising manager of Sun-Maid Raisin Growers of Fresno, California.

Mathews Conveyor Company West Coast have moved their Los Angeles office to 6160 Santa Monica Blvd., Los Angeles 38.

Clarence H. Gabriel, service engineer in the firm's Salt Lake City branch, becomes manager of the Denver sales and service branch.



E. D. Samson of Torrance, Calif. Samson's phone number is YUkon 2-7120.

Elmer D. Samson, San Francisco, establishes a new manufacturers' agency at 420 Market St., from where he will handle Northern California territory. Lines include: Manheim Mfg. and Belting Co., makers of Vee-loss link V-belt; Dings Magnetic Separators; and International Derrick Co.

Western Asbestos Company, San Francisco, appointed an authorized Insul-Mastic licensee. Insul-Mastic materials are heavy mastic materials which are spray applied at atmospheric temperatures and are used in industry to vaporseal and protect against corrosion.

Addison-Semmes Corp., Racine, Wis., licenses Longview Fibre Co., Longview, Washington, to manufacture paper pallets, at their plants in Longview, Wash., and Los Angeles, Calif., as well as their new plant now under construction at Oakland, Calif. (See *Western Industry*, April, 1949.)

V. C. Dollman chosen Pacific Coast sales manager for Wheeling Steel Corp., Wheeling, West Virginia, and will make his headquarters in San Francisco. Dollman was formerly the company's resident sales representative in Indianapolis, and replaces K. P. House, who goes to Wheeling as assistant manager of the pipe division.



S. M. Washabaugh

S. M. Washabaugh appointed president of National Screw & Mfg. Co. of Calif., with headquarters at Los Angeles. Prior to this appointment, Washabaugh served with National Screw & Mfg. Co. at Cleveland, Ohio, for the past ten years.

Howard J. Simpson, formerly with the Air Conditioning Engineering Corporation in Las Vegas, Nevada, becomes a sales representative for the state of Nevada by The National Radiator Co., Johnstown, Penna. Simpson will make his headquarters at 1734 South Main Street, Las Vegas.

Roger Stewart appointed sales engineer and Euclid Martin appointed sales representative by Martin Iron Works, Los Angeles, manufacturers of irrigation gates and valves, commercial gates for the oil and general industry, and concrete pipe machines. Stewart will supervise all sales activities for the eleven Western states and Texas; Martin will be in charge of sales for the San Joaquin and Sacramento Valleys.





• **New headquarters for Continental Sales & Service Company at 3817 South Santa Fe Avenue, Los Angeles, California, offers Western transportation industry one of the most complete engine and service facilities within that area. B. F. Tobin, Jr., upper right, is president of the firm; H. N. Holt, left, vice pres.**

J. W. Guthrie Co., agents for Nox-Rust Chemical Corp., open an office at 1855 Industrial St., Room 106, Los Angeles. Phone Vandyke 4954. A. W. Christiansen is resident manager, and will have the complete line including Nox-Sound automobile undercoat, Vapor Wrapper (vapor-phased impregnated paper to prevent corrosion) and other liquid and wax type preventives.

E. C. Livingston Co., California distributors of Butler Steel Buildings, move their office from 108 W. 6th St., Los Angeles 14, to 1428 No. Spadra, Fullerton.

Four members of General Petroleum's marketing department training division took to the road recently to spend two months conducting "post graduate" sales courses in the field for the concern's distributors and wholesale agents and their personnel. Starting in Spokane and working their way southward through Washington, Oregon, Idaho, California and Arizona to Phoenix, the quartet will stage a three-day school at each session. L. C. Jobe and D. L. Hicks will present subjects relating to service station operations, while F. P. Baeyertz and T. W. Russell will handle matters affecting commercial and industrial sales.

E. A. Trask, former head of San Francisco's office of John A. Roebling's Sons Co. of California, assumed new duties as sales manager of the company's Chicago branch. G. C. Bukowsky, former manager of Portland, Oregon, branch, succeeds Trask.

All salesmen of The Republic Supply Company of California met recently in Los Angeles for a general sales meeting. Roy Johnson, Republic's vice-president in charge of sales, called the meeting to discuss present and future sales policies. More than 80 salesmen from Republic's seventeen branch stores attended.

Eugene C. O'Connell, formerly service engineer for Independent Pneumatic Tool Co.'s Los Angeles branch, upped to manager of the San Francisco sales and service branch.

Degen-Fiege Co., Los Angeles, appointed distributor by Raybestos-Manhattan Inc., for their line of mechanical packings.

Winn Supply Co., San Diego, are newly appointed distributors by Chain Belt Co. for their line of conveyors, chains, and transmission equipment.

To promote closer cooperation between the factory and its distributing organization, White Motor Company, Pacific Coast Region, under leadership of Wilson D. Patterson, regional manager, recently held the first of a newly inaugurated factory-distributor council meeting in San Francisco. These regional committee meetings will be held semi-annually with a factory meeting to be held each year attended by one elected member of the distributor committee from each region. Patterson serves as chairman and each year selects five members from the distributor group to serve on the council. These men will serve one year and are rotated each year so that ultimately every distributor will serve. Recently selected to serve on this council are: Frank Sawyer, Sawyer Motor Co., Long Beach, Calif.; Austin B. McCoy, McCoy Auto Co., Vancouver, Wash.; M. A. Lindner of Lindner & Wood, Salt Lake City; A. G. Strecker, Jones-White Truck Co., Spokane; and J. H. Abrew, White Truck Sales, Oakland, Calif.

B. W. Jennings, former lubrication engineer, named manager of consumer sales promotion department for Utah and Idaho by Utah Oil Refining Company; B. G. Midgley, Salt Lake division manager, appointed sales manager of consumer department, Salt Lake division; M. D. Hammond, Ogden division manager, named Utah consumer department assistant sales manager; W. Lee Wright, salesman, appointed Utah reseller department assistant sales manager.

Harry Q. Johnson named by B. F. Goodrich Co. to manage their new Portland, Ore., warehouse, at 3055 N.W. Yeon Ave.

Paul M. Smith named general sales manager of the Wheeler Osgood Company, Tacoma, Washington, succeeding Harry O'Neil, resigned. Mr. Smith for the past two years has been manager of the Fir Manufacturing Co. of Myrtle Creek, Oregon. Douglas McCann now manages the Myrtle Creek operations.

J. I. Hamilton appointed general sales manager for Menasco Manufacturing Co., Burbank, California, succeeding B. C. McNeill, resigned. Mr. Hamilton was formerly connected with Curtiss-Wright Corp. for ten years and held the position of assistant sales manager for the last five years.

S. W. Foulger named sales representative in Salt Lake City for National Radiator Co., Johnstown, Pa. He will handle residential, commercial and institutional boilers, radiators and heating accessories; his Salt Lake address is P. O. Box 446.

Skilsaw, Inc., Seattle, appoint Byron Hoffman resident sales representative in Spokane. He will be located at East 717 - 40th Street and will cover eastern Washington, Montana, and the Idaho panhandle under the supervision of the Seattle factory branch.

General Electric Co. appoints Paul B. Slater Co. distributors of G. E. Surface Specimens and Scales. Slater Co. maintains two main Western offices—one at 2166 Market St., San Francisco; the other, 102 Santa Fe Ave., Los Angeles.

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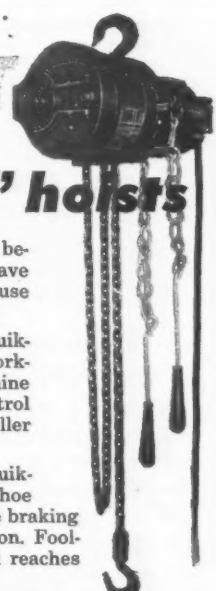
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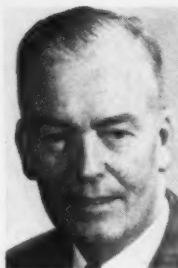
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Andrew Carrigan

Andrew Carrigan appointed assistant to Harold Q. Noack, division vice-president of the Central Sales Division of Columbia Steel Co. Before his advancement, Carrigan was manager of sales for the Central Division, with offices in the Russ Building, San Francisco.

R. Starr Farish promoted to sales manager of New England Fish Company. In this capacity he will direct national sales of the company's packs of canned and frozen packaged fish.

Charles A. Flannery appointed special assistant to Ralph W. Seely, vice-president, sales, in Los Angeles for Consolidated Western Steel Corporation.

Newton R. Crum, Alhambra, California, named representative for Flexible Steel Lacing Co. of Chicago, Ill., in California.

F. T. Isaacson, former vice-president of Young Iron Works, Seattle, Washington, appointed manager of Seattle branch of Howard Cooper Corporation.

Stapp Engineering Co., Denver, Colo., appointed engineering sales representative for Graver Water Conditioning Co. They have complete facilities for handling engineering work, detailed drafting, and erection of installations. They will handle the complete line of Graver water conditioning equipment, including hot and cold process water softeners, zeolite water softeners and demineralizers, deaerating heaters, chemical feeders, and filters for removal of taste, odor, oil, iron, silica, etc., from water for boiler feed, municipal water supply, chemical process and general industrial processes.

Richard B. Borland appointed manager of Westinghouse Electric Corporation's Lamp Division for South Pacific sales division headquartered in Los Angeles. He formerly managed Los Angeles branch office.

The newly-created Central Pacific sales division is headed by George E. Congdon of San Francisco, who was formerly branch manager in that city. Frank T. Anderson named manager of the new North Pacific sales division in Seattle, Washington. He was formerly branch manager in Seattle.

Robert H. Braun Company, 3008 East Olympic Boulevard, Los Angeles, has added a new and completely equipped mobile service to their fast growing fleet of service trucks. This makes three completely equipped mobile service units to serve the trade. Braun has expanded the Fresno branch to include a parts and service station where adequate parts inventory is stocked. W. W. Gray named manager of Fresno branch. Harold Hoag, formerly with the Clark factory service, now associated with the Fresno office. In addition, Braun has taken on several new handling lines which include: Aerol Company, Inc. — Aerol aluminum Timken bearing wheels and casters; Speedways Conveyors, Inc. — gravity wheel, roller and belt booster types; Wilshire Power Sweep Company — Wilshire sweepers, industrial walk or ride type, gas powered sweepers; Goodyear Tire & Rubber Co., industrial tires.

George D. Roberts, formerly vice-president, promoted to executive vice-president in charge of business engineering services of Henry von Mompungo, Inc. in San Francisco.

Robert E. Reedy named manager of sales engineering department of Lockheed Aircraft Corporation. He will fill vacancy created when C. F. Thomas transferred to position of Military Relations manager in 1948. Byron B. Masterson will assist Reedy in charge of Commercial Sales Engineering, with Stanley T. Beale continuing the supervision of Military Sales Engineering.

Paul Irish has joined Stoodly Company, Whittier, California, as plant metallurgist to supervise production of its many hard-facing alloys. Charles E. Rogers promoted to sales metallurgist.

William F. U'Ren resigned from Columbia Steel Company to accept a position as sales engineer for Columbia Steel Casting Company, Portland, Oregon. His territory will include California and Nevada.

E. R. Squibb and Sons announce new Southern California and Arizona district headquarters at 2533 Eastland Avenue, Los Angeles. The plant, costing \$500,000, is designed largely for packaging and distribution.



R. M. Hatfield, Jr.

Combustion Engineering - Superheater, Inc., New York, establish a Western division with headquarters at Los Angeles and branch offices in San Francisco and Seattle. Robert M. Hatfield, Jr., formerly assistant general sales manager, becomes general manager of the Western division. He will be in charge of all company activities in the states of Washington, Oregon, California, Nevada, and Arizona.

Vincent Steel Process Company announce appointment of Liberty Equipment and Supply Company as West Coast representatives with headquarters at 2022 East Seventh Street, Los Angeles, California.

Arthur F. Kelly elected vice-president, sales, of Western Air Lines, Inc. Kelly will direct Western's sales, traffic, advertising and promotional programs.

William R. H. Eby, branch manager at Seattle, named to newly created position of industrial sales manager of Pacific district of York Corporation, with headquarters at Los Angeles.

Richard J. Swan appointed area manager for Allegheny Ludlum Steel Corp., with headquarters in Los Angeles. Prior to this appointment, Swan served as district manager for the firm in their Dayton, Ohio, office. Coincident with this appointment are these other changes: Jerome E. Turk becomes assistant district manager with headquarters also in Los Angeles; R. P. Stemmler appointed manager of the Los Angeles Forge Plant, succeeding M. F. Finley, retired.



Richard J. Swan

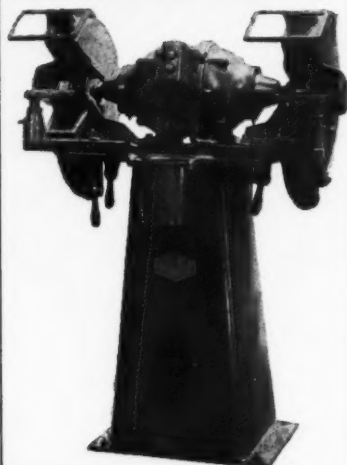
Robert L. McJimsey named division manager for San Joaquin Valley of Drake Steel Supply Company headquartered at Fresno, California. William A. Oakford named supervisor of Re-Bar fabricating department at Fresno, where T. V. Morgan continues as supervisor of sales.

Bearing Specialty Company, Oakland, California, appointed distributor for O-rings manufactured by The Parker Appliance Co.

Mueller Brass Company, with factory and headquarters at Port Huron, Michigan, announced opening of new warehouse in Tacoma, Washington. The Tacoma warehouse will serve Washington, Oregon, Idaho, Montana, British Columbia and Alaska, which previously had been served from the factory or the San Francisco warehouse. Edward J. Arthur of Tacoma, Northwest manager, will move the local office to new location. Virgil Benenatti comes here from Port Huron to be warehouse manager.

A. R. Tucker, Jr., of the Los Angeles office of The Dow Chemical Company, named head of Styrofoam sales. He assumes new duties at company's executive offices in Midland, Michigan, replacing Joseph E. Russell, resigned. E. R. Turnquist appointed technical sales advisor, working closely with Tucker.

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Inland Steel Company of Chicago, Illinois, announces the appointment of Lawrence-Totten Company of Los Angeles, San Francisco and Seattle, as Pacific Coast sales agents for Inland Steel Sheet Piling.

Gumout Division of Pennsylvania Refining Co., Cleveland, Ohio, appoints: James H. Page, 827 Locust St., Denver, Colo., to cover the Mountain States territory; Rice Brothers of Portland and Seattle, to cover Washington, Oregon, and Western Idaho. These men will handle Penn Drake Gumout in exclusive territory. Gumout is a substance that cleans carburetors thoroughly, inside and out, without taking them apart or removing them from the engine.

Fageol Motors, Inc., 916 Maynard Ave., Seattle, appointed distributor for White Trucks in the Seattle and Western Washington area, including 21 counties, as well as the Territory of Alaska.

Stuart A. Whitehurst appointed Pacific Coast representative of Selas Corp. of America, Philadelphia, Pa. His headquarters will be at Los Angeles.

E. L. Hackett, Jr. appointed district supervisor, Portland, Oregon, of American Coach & Body Company, succeeding T. R. Hall, transferred to Oakland as district supervisor. L. F. Linn named purchasing agent. F. C. Hall appointed director of sales for entire company, dividing his time between Oakland and Cleveland.

William VanVleet appointed eastern division manager of National Supply Company, Pittsburgh, Pa.

Paul C. Wilmore appointed regional manager of Reynolds Metals Company, building products division, Region I, which comprises the eleven Western states. Reynolds Metals Company manufacture all types of Aluminum Building Materials, maintaining district offices in San Francisco, Los Angeles, Seattle and Denver.

Denis J. Mullane named West Coast sales manager for The Harrington Co., manufacturers of chain hoists, electric hoists, trolleys and cranes. His territory covers California, Washington, Oregon, and possibly Salt Lake City and Denver, with headquarters in Seattle.

Herman E. Held and Associates appointed representatives for Tagliabue; also will continue to act as field representatives for Weston Electrical Instrument Corp., Newark, N. J.; Western Electro-Mechanical Co., Oakland, California; Radio Frequency Laboratories, Inc., Boonton, N. J.; Leach Relay Company, Los Angeles, California; and R. W. Cramer Company, Inc., Centerbrook, Connecticut.

To better serve the increasing technical needs of its customers in the Los Angeles area, National Starch Products Inc. transferred Robert L. Burk, technical service engineer, from the company's San Francisco laboratory.

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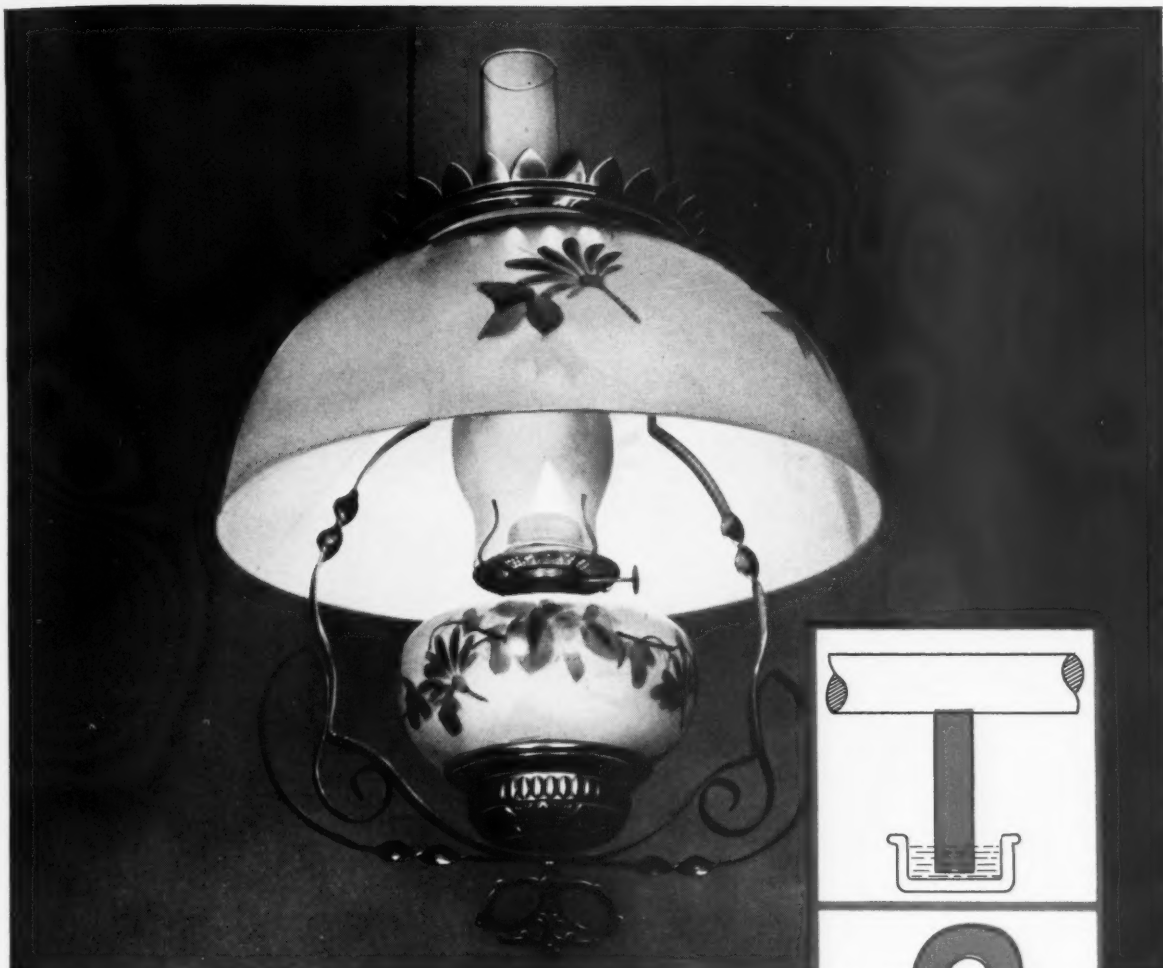
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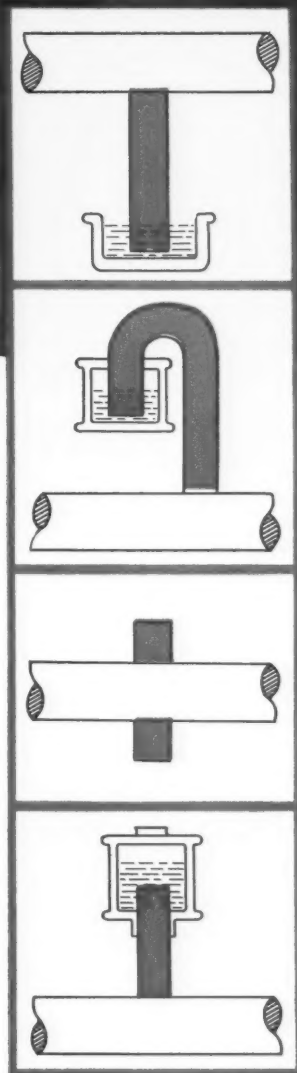
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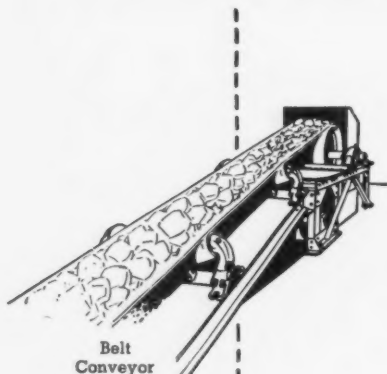
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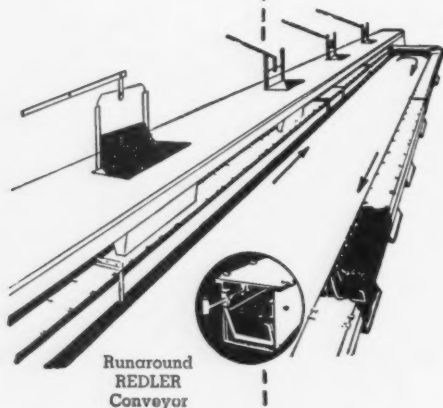
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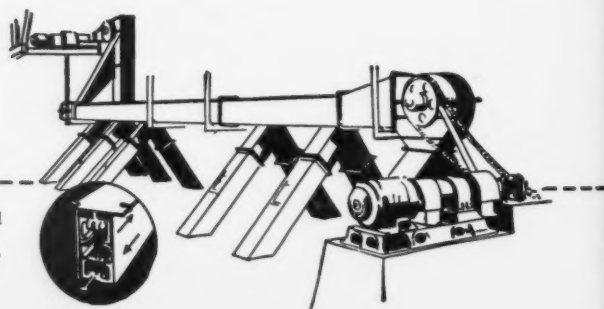
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